ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE

SCHOOL OF NURSING AND MIDWIFERY

DEPARTMENT OF NURSING

KNOWLEDGE, PRACTICE AND ASSOCIATED FACTORS REGARDING CARE OF ACUTE CORONARY SYNDROME AMONG ACUTE CARE NURSES WORKING AT SELECTED HOSPITALS OF ADDIS ABABA, ETHIOPIA 2021

BY: BIZUAYEHU ASHINE (BSC NURSE)

A RESEARCH THESIS TO BE SUBMITTED TO ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCE SCHOOL OF NURSING AND MIDWIFERY DEPARTMENT OF NURSING FOR THE PARTIAL FULFILLMENT OF THE REQUIREMENTS OF MASTER'S OF SCIENCE DEGREE IN CARDIOVASCULAR NURSING.

JANUARY, 2021

ADDIS ABABA, ETHIOPIA

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BY:

Bizuayehu Ashine (BSc)

ADVISORS:

1. **Mr. Daniel mengistu (Assistant professor, PHD fellow)**
2. **Mr. Wudma Alemu (MSc, PHD fellow)**

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This is to certify that the thesis prepared by Bizuayehu Ashine, entitled: Knowledge practice and associated factors regarding care of acute coronary syndrome among acute care nurses working at selected hospitals of Addis Ababa, Ethiopia and submitted in fulfillment of the requirements for the Degree in Master of Science in cardiovascular Nursing complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Approval by the Examining Board:

DANIEL MENGISTU (Ass. Prof, PHD FELLOW) _____

Advisor Signature

WUDMA ALEMU (MSc, PHD FELLOW) _____

Advisor Signature

DEBELA GELA (MSc, Ass. PROFESSOR) _____

Examiner Signature

Chairman of the Department or Graduate Program Coordinator

NIGUSE TADELE (MSC, Ass. PROFFESOR)

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STUDENT

Name: Bizuayehu Ashine Signature: _____ Date: _____

RESEARCH ADVISORS:

Mr. Daniel Mengistu	_____	_____	_____
NAME	RANK	SIGNITURE	DATE
Mr. Wudma Alemu	_____	_____	_____
NAME	RANK	SIGNITURE	DATE

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ABBREVIATIONS AND ACRONYMS

AAU: Addis Ababa University

ACS: Acute coronary syndrome

AOR: Adjusted odds ratio

CAD: Coronary artery disease

CCU: Cardiac care unit

COD: Crude odds ratio

CVD: Cardiovascular disease

CS: Cardiogenic shock

ECG: Electrocardiogram

ED: Emergency department

ICU: Intensive care unit.

ICD: Ischemic heart disease

LDL: Low density lipoprotein.

MI: Myocardial infarction

NCD: Non communicable disease

NP: Nurse practitioner

NSTEMI: Non St Elevation myocardial infarction.

RHD: Roumatic heart disease

RN: Registered nurse

SPSS: Statistical Package for Social Science

STEMI: St Elevation myocardial infarction

TASH: Tikur Anbessa Specialized Hospital

UA: Unstable angina

WHO: World Health Organization

ABSTRACT

Background: Globally cardiovascular diseases are a number one cause of death. Acute coronary syndrome accounts most cardiovascular deaths which is a life threatening condition requires a lifesaving intervention and intensive nursing practice. Acute care nurses play an integral role in the assessment and care of patients with ACS. However we know little about the knowledge and practice of nurses regarding care of ACS.

Objective: The aim of this study was to assess knowledge, practice and associated factors regarding care of acute coronary syndrome among acute care nurse working at selected hospitals of Addis Ababa, Ethiopia 2021.

Methods: Institution based cross-sectional study was conducted from February 8 to March 8 among 265 nurses working in ICU, CCU and Emergency departments recruited from selected governmental hospitals by census method. The data was collected by self-administered questionnaires and entered in to Epi info then transferred to SPSS for analysis. Descriptive statistics were calculated and also binary logistic regression and multi variable logistic regression were used to determine association.

Result: The study revealed that from a total of 265 nurses with a response rate of 95% were participated in this study from which (52%) of the respondents had good knowledge and (56.4%) had good practice regarding care of acute coronary syndrome. There was a significant association between nurses' knowledge level and training (AOR=9.2, 95%CI (3.4-25.29), P value=0.000) and availability of guidelines (AOR= 7.2, 95%CI (1.5-34.4), P value=0.000). Training (AOR= 9.7 95% CI (3.33-28.5) P value= .000 and working unit (AOR=6.4, 95% CI=1.46-28.4, P=0.014) were also significantly associated with nurse's practice towards ACS care.

Conclusion and recommendations: The results from this study showed that nurses had inadequate knowledge and practice towards ACS care. Lack of guide lines and training are a contributing factors. Therefore, the hospital's administrative and supportive organizations would better to provide training regarding care of ACS and avail guidelines.

Key words; knowledge, practice, acute care nurses, acute coronary syndrome care.

1. INTRODUCTION

1.1 Background

Cardiovascular diseases cause approximately one-third of all deaths in the world, from these deaths 7.5 million are due to ischemic heart disease (IHD). Acute coronary syndromes (ACS) and sudden death cause most IHD-related deaths, which represents 1.8 million deaths per year(1).

According to WHO globally cardiovascular disease are the number one cause of death. An estimated 17.9 million people died from CVDs in 2016, representing 31% of all global deaths. Of these deaths, 85% or four out of five deaths are due to heart attack and strokes, and one third of these deaths occur prematurely in people under 70 years of age over three quarter of CVD deaths take place in low and middle income countries (2).

ACS is defined as a spectrum of diseases that encompasses unstable angina, non-ST segment elevation myocardial infarction (NSTEMI), and ST segment elevation myocardial infarction (STEMI) (3). It can result from a sudden drop in blood flow through the coronary arteries supplying the different regions of the myocardium. This can compromise the myocardium, leading to reversible ischemia or a complete loss of blood supply, which in turn leads to myocardial infarction and ultimately myocardial cell death or necrosis (4).

In sub Saharan Africa cardiovascular diseases were the second leading cause of NCD burden and the prevalence of acute coronary syndrome also increasing due to epidemiological transaction changes in the lifestyle, the westernization of the food practices, the increasing prevalence of diabetes mellitus and hypertension (5, 6). According to the systematic analysis CVD burden in Ethiopia from 1990 to 2017 the number of CVD cases were doubled in 2017 as compared with 1990 of which RHD, IHD and stroke were the most prevalent cases and the prevalence of the risk factors of acute coronary syndrome is progressively increasing in Ethiopia (7).

The knowledge and practice of ACS care is the nurse's ability to understand the sign symptoms, causes, risk factors, managements and complications of ACS and the ability of performance in the early assessment prevention and managements of ACS.

Acute care nurses play an integral role in the assessment, prevention and care of patients with ACS and the competency of acute care nurses leads to improved quality of patient care and satisfaction(8). An acute care nurses work mainly in hospital emergency rooms and intensive care units or specialty department such as cardiac care unit, who helps patients with time-sensitive or critical issues (9). Acute care nurses are primarily responsible for administering care for acute coronary syndrome patient. They must be an expert clinician who can recognize sign, symptoms and complications of acute coronary syndrome at the earliest stages (10).

Several study showed the knowledge and practice of nurses regarding acute coronary syndrome was inadequate. According to a cross sectional study conducted in Stanford University the level of acute care nurses knowledge and practice were insufficient to care critically ill patients (11). Another study conducted in Sudan revealed that the knowledge and practice of ACS among acute care nurses was low (12). There are a myriad of factors associated with nurse's knowledge and practice regarding care of acute coronary syndrome. Some of the factors associated with their socio demographic characteristics such as age, work experience, monthly income and educational level (13). On the other hand health system related factors such as, material resource, human resource and in-service training are associated with the knowledge and practice of nurses (14).

In overall cardiovascular disease remains a major healthcare problem and ACS refers to a range of potentially life-threatening conditions which requires life-saving intervention and application of high technology medicine and intensive nursing practice. A lack of study in our country blinded us about the current level of knowledge and practice among acute care nurses regarding ACS care in Ethiopia. This necessity needs more work up and evaluation.

1.2 Statement of the problem

Acute coronary syndrome is the greatest cause of mortality and loss of disability-adjusted life years worldwide, and a substantial portion of this burden falls on low- and middle-income countries majorly in young populations (15). According to Institutional based study conducted in Ayder Comprehensive Specialized Hospital and Tikur Anbessa Specialized Hospital showed the proportion of in-hospital mortality due to ACS was 24.5%, and 27.4% respectively and hypertension was the most frequent (46.4%) risk factor of ACS in Ayder Comprehensive Specialized Hospitals, Ethiopia (16, 17). Which are extremely high compared to sub-Saharan Africa and a meta-analysis study conducted from 20 tertiary hospitals in Heilongjiang Province in China in hospital mortality was 7.66% and 10% respectively (6, 18).

ACS negatively affect the quality of life for individuals their personal relationships their gaze of the future and every aspects of life in comprehensive manner (19). Patient delay prevents from achieving optimal benefit of time-dependent treatments for acute coronary syndrome. Patient delay was one predictors of death in Tikur Anbessa Specialized Hospital. Reducing delay would reduce mortality and morbidity (17, 20). According to one Meta-analysis study conducted in United States among 41 articles depression and anxiety are common in patients with coronary artery disease (CAD) and anxiety was associated with an increased risk of poor outcomes in the stable CAD (21). There was also a significant post discharge morbidity and mortality in patients with acute coronary syndrome. Therefore patient education' about medication adherence enabling access to cardiac rehabilitation and clinical follow up as well as consideration of patient specific needs are essential for successful continuity of care(22).

Acute care nurses play an important role in addressing the patients' needs. Nurse-led education programs improved patient's knowledge, attitude and beliefs about ACS. It also an effective method for the reduction of cardiovascular risk in patient with ACS and reduction in hospital readmission (23, 24). A case control study conducted in Shahrekord University of Medical Science, Iran showed health education intervention after MI has a significance reduction on smoking, cholesterol level, body mass, anxiety level, and systolic and diastolic blood pressure (25). Patients receiving care from a medical team that included

nurse practitioner were re hospitalized approximately 50% less often compared with those receiving care from a medical team without nurse practitioner (26). Nevertheless, According to systematic review study from 8 databases, the nursing practice health education related interventions for a patient with ACS showed poor(27). International guidelines American heart association and American college of cardiology set ACS care parameters such as obtain ECG within 10 minutes of patient arrival (28). But study showed that even these guidelines established majority of patients did not receive an ECG by acute care nurses with in time limit (29). This indicates the poor practice of nurses in the area of ACS care. On the other hand study conducted in Sudan Elmak Nimar university revealed more than half (60%) of acute care nurses were having poor knowledge about reliving factors of ACS pain (30).

Acute care settings are expected to utilize evidence based practice guidelines, provide professional development create convenient working environment for acute care nurses. Study showed lack of management support was one of the most hinders for caring by influencing knowledge and practice of acute care nurses (31). According to an experimental study conducted in Iran scenario based learning can have a significant influence on enhancing the knowledge and practice of acute care nurses about their care with patients suffering from acute coronary syndrome(32). Training had a significant effect on the acquisition of knowledge regarding acute coronary syndrome among acute care nurses (33).

Acute coronary syndrome is a critical health situation which requires standardized care policies, as well as it needs a qualified and skilled health care providers to obtain good outcome. Nurses are a front line in the care of acute coronary syndrome and can influence the outcome for patients with acute coronary syndrome. Therefore the nurses that equipped with adequate knowledge about acute coronary syndrome care is critical in control, prevention and care of the disease (34). However, in our country no study has been conducted related with nurse's knowledge and practice regarding care of ACS to date. Therefore this study was given insight to assess the knowledge, practice and associated factors of nurses regarding care of acute coronary syndrome in Addis Ababa, Ethiopia.

1.3 Significance of the study

Acute coronary syndrome is one of the most common complain that bring patient to the emergency department, seeking immediate care to maintain lifesaving, there is still high mortality rate in the world. In hospital mortality of ACS also high in Ethiopia, Tikur Anbessa and Ayder hospital. Nurses have a crucial role in the clinical management of patients with ACS, by helping them to understand their condition and care, and promoting secondary prevention(4). ACS requires life-saving intervention and application of high technology medicine and intensive nursing. Thus, the nurses should possess up-to date knowledge regarding ACS. This study highlights the need to advocate for knowledge application and address knowledge deficits in the area of ACS care and to identify factors associated among nurses. Which will in turn, stimulate policy maker's health care managers' health professionals to require appropriate measures and decision making. It'll establish baseline information about current knowledge and practice of nurses towards ACS. The data generated in this study will serve as base line for future researchers.

2. LITRATURE REVIEW

2.1 Introduction

There is a limited study on nurse's knowledge and practice regarding care of acute coronary syndrome. This chapter provides information about overview of acute coronary syndrome, socio demographic characteristics of study participants, nursing care of acute coronary syndrome, knowledge of nurses regarding acute coronary syndrome, performance of nurses regarding acute coronary syndrome and factors associated with knowledge and practice of nurses on ACS care by reviewing recent literatures and guidelines.

2.2 Overview of Acute coronary syndrome

The hallmark of ACS is the sudden imbalance between myocardial oxygen consumption and demand, which is usually the result of coronary artery obstruction (28). Acute coronary syndrome has broad clinical presentations. It ranges from cardiac arrest, hemodynamic and electrical instability with cardiogenic shock due to ongoing ischemia or mechanical complications. Acute coronary syndrome signs and symptoms usually begin abruptly. They include: chest pain or discomfort, often described as aching, pressure, tightness or burning pain spreading from the chest to the shoulders or arms, shortness of breath, Lightheadedness, nausea or vomiting ,diaphoresis, dizziness and fainting (35). Smoking, high blood pressure, high blood cholesterol, diabetes, physical inactivity, being overweight or obese, a family history of chest pain, heart disease or stroke are the risk factors for acute coronary syndrome (36).

2.4 Socio demographic characteristics

Across sectional study conducted in Albany state university to assess nurses competency regarding acute coronary syndrome recognition the distribution of nurses according to gender showed majority 86.5% were females and 34.6% had (4- 7) and 21% had (1-3) years of experience. Study participants were greater than one year (37).

On the other hand a cross sectional study conducted in Sudan Elmak Nimer Universty hospital to assess nurse's knowledge and practice regarding care of ACS study participants were greater than one year and the distribution of nurses according to their educational

level showed that bachelor was the highest proportion (67%) followed by master (20 %). Nearly half (47 %) of study participants were more than five years' experience and 30% between two and five years. Greater than half 57% of them had no previous training program (30).

2.5 Knowledge of nurses regarding care of acute coronary syndrome

The knowledge of ACS care is a nurse's ability of understanding about causes, sign symptoms, risk factors, complications and the overall managements of acute coronary syndrome. The knowledge of acute care nurses on the care of patients with acute coronary syndrome (ACS) is essential to reduce the gap between evidence and practice(33).

According to a cross sectional study conducted in India to assess nurses knowledge of acute coronary syndrome, the overall level of knowledge of nurses were 57 % of the nurses had good knowledge and 31% had very good knowledge. The mean score was 30.32 and standard deviation was 5.843. 85% of the nurses identified the definitions of ACS (25). 30% of the nurses had poor knowledge of common medication to treat ACS but 50% had good knowledge about the complications of the ACS (38).

In a study conducted in Albany state university about nursing competency regarding ACS recognition among emergency nurses showed no study participants were achieved a passing score. Correct answers ranged from 3 (25.00%) to 10 (83.30%) with a mean, median, and mode of 7 (58.30%) and SD for the study was 0.13 (37).

The other cross sectional study in University of north Carolina on nurse practitioner knowledge of symptoms of acute coronary syndrome revealed that nurse practitioner had higher accuracy in classic heart symptoms (39).

On the other hand study conducted in Elmak Nimar Sudan study 57 % had good knowledge about ACS. More than half (58%) and (57%) of study group had good knowledge about definition of ACS and risk factors of ACS. About more than half (57%) of study group had good adequate knowledge regarding clinical feature of ACS ,and more than two third (77%) were good knowledge about common diagnostic tests of ACS (30).

Similarly a descriptive study conducted on 139 critical care nurses employed in five teaching hospitals at Khartoum state, Sudan to determine nurses' knowledge about initial drugs used during emergency management of acute myocardial infarction revealed that greater than half (60%) of study participants had poor knowledge(40).

2.6 Practice of nurses regarding care of acute coronary syndrome

The practice of ACS care is a nurse's performance on the assessment, prevention and management of acute coronary syndrome.

According to a cross sectional study conducted in china on nurses knowledge and practice in cardiovascular disease prevention there was an obvious gap between nurses knowledge and practice even though more than two third of nurses were knowledgeable about cardiovascular disease prevention however fewer than 70% actually provided health education for CVD prevention during their practice (41).

Another Study conducted in Asia to assess the effectiveness of acute coronary syndrome algorithm on nursing management of patient with acute coronary syndrome revealed that 32.8 % of nurses had inadequate practice and 67.14 % had moderate practice during pre-test assessment. While 34.28% had moderate practice and 65.71% had adequate practice after post-test regarding acute coronary syndrome care (42).

More over descriptive study conducted in Iran on 70 nurses selected from coronary care units of four hospitals to assess quality of nursing care for patients with acute myocardial infarction showed that 24 % of study participants had good quality of practice(13).

On the other hand, cross sectional study in Sudan Elmak Nimer Universty hospital showed that 64 % had good practice. The majority of study groups were good performance about health education of dietary therapy (60%), risk factors (63%), medication (77%), monitoring and managing ACS complication (67%), and pain assessment (73%), of hospitalized ACS patient. while nearly half of study participants had poor performance on reducing anxiety (50%), and daily activity (47%) (30).

2.7. Factors associated with nurse's knowledge and practice on acute coronary syndrome care.

According to a descriptive study conducted in Iran there was a highly positive association between the levels of quality of nursing care, levels of nurse's education, Age 29-35, male gender and 1-8 years of experience(13).

A descriptive quantitative study conducted at Al-Najaf City revealed that there was a significant association between the overall nurses' knowledge towards management of patients with coronary failure and their age, levels of education, years of experience. However there was no significant association with gender, marital status and socioeconomic status (43).

According to a qualitative study in northern Tanzania provider-related barriers included inadequate training regarding ACS and poor application of textbook-based knowledge or poor adherence to guidelines; system related barriers including lack of necessary diagnostic equipment's, lack of necessity treatments and lack of data and guidelines had positive association with nurses knowledge and practice in ACS care (14).

Similarly in depth interview study in Kenyatta National Hospital reviled inadequate diagnostic and therapeutic capabilities, lack of hospital wide ACS guidelines, undertraining of health care providers are major barriers to ACS care (44).

On the other hand a study conducted in Taiwan work load including nurse- patient ratio, working hour and payment significantly affects their practice (45). Systematic review study conducted in England from 9 databases published from 2007 to 2017 showed that there was an association between a higher level of nurse staffing and improved patient outcomes. According to the study for every increase of one nurse, patients were 14% less likely to experience in hospital mortality (46).

2.8. Conceptual frame work

The knowledge and practice of nurses on acute coronary syndrome care can be affected by different factors some of the factors may be associated with their socio demographic characteristics such as age, sex work experience and educational level. Similarly social health system related factors such as, material resource, human resource and in-service training affect the knowledge and practice of nurses. On the other hand provider related factors such as, knowledge of nurses, poor adherence to guidelines or text book based

knowledge's affect the practice of nurses on acute coronary syndrome care. This condition going to be shown in the following diagram.

Conceptual frame work showed the relationship between dependent and independent variables developed by the principal investigator by reviewing different litratures(13, 14, 43-46).

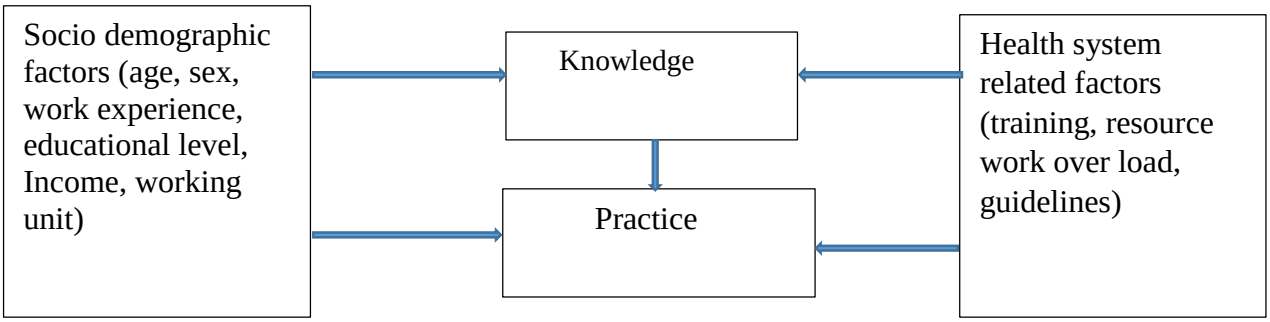

Figure 1 Conceptual frame work exploring Knowledge practice and associated factors regarding care of ACS among acute care nurses working at selected hospitals of Addis Ababa, Ethiopia, 2021.

3. OBJECTIVES

3.1 General objectives

To assess knowledge, practice and associated factors of acute care nurses regarding care of acute coronary syndrome working at selected hospitals of Addis Ababa, Ethiopia 2021.

3.2 Specific Objectives

- To determine knowledge of acute care nurses regarding care of acute coronary syndrome working at selected hospitals of Addis Ababa, Ethiopia 2021
- To determine practice of acute care nurses regarding care of acute coronary syndrome working at selected hospitals of Addis Ababa, Ethiopia 2021.
- To identify factors associated with knowledge of acute coronary syndrome among acute care nurses working at selected hospitals of Addis Ababa, Ethiopia 2021.
- To identify factors associated with practice of acute coronary syndrome among acute care nurses working at selected hospitals of Addis Ababa, Ethiopia 2021.

4. METHODS AND MATERIALS

4.1 Study area and Setting

The study was conducted in Addis Ababa the capital city of Ethiopia and the seat of African union. The city consists of 13 sub cities and an estimated 6.6 million people by 2017. There are 14 governmental hospitals in Addis Ababa. These are Tikur Anbessa specialized hospital, St Paul's hospital, Zewditu memorial hospital, Yekatit 12 hospital, St Peter Specialized hospital, Minilik II hospital, Ras Desta damtew hospital, Tirunesh Bejing hospital, Torhayiloch hospital, police force hospital, Amanuel mental health hospital, Ghandi memorial hospital, Eka Kotebe hospital and Alert hospital. The study will conducted at Tikur Anbessa specialized hospital, St Paul's hospital, and St Peter Specialized hospital. Those hospitals were selected purposively because out of 14 hospitals cardiac unit are present in these hospitals.

Tikur Anbessa specialized hospital is established in 1966 and located in Lideta sub city. It is the largest referral hospital in the nation at the tertiary level. The hospital had 800 beds with 470 doctors, 69 midwifery professionals, and 825 nurses. ICU and Emergency will specific setting for the study a total of 122 nurses working in ICU (44), CCU (13) and Emergency (65).

St. Paul's hospital is the second largest tertiary-care teaching multi-facility and multi-disciplinary medical centre for Ethiopia. The adult ICU is staffed by 42 nurses, CCU by 10 nurses and Emergency department by 40 nurses.

St Peter Specialized hospital is one of the main tuberculosis and toxicology centers in Ethiopia staffed by 24 nurses in Emergency 8 nurses CCU and 25 nurses in ICU.

4.2 Study period

The study was conducted from February 8 – March 8, 2021 GC

4.3 Study design

Institutional based ross-sectional study design was conducted.

4.4 Population

4.4.1 Source population

The source populations were all nurses working in adult emergency department (ED), coronary care unit (CCU) and intensive care unit (ICU) of selected government hospitals in Addis Ababa, Ethiopia.

4.4.2 Study population

The study populations were all nurses who are working in ICU, CCU and adult Emergency departments of selected government Hospitals during the study period

4.4.4 Study unit

Study unit were each nurses working in ED, ICU and CCU departments of three selected hospitals that full fills the inclusion criteria

4.5 Eligibility Criteria

4.5.1 Inclusion criteria

- ✓ Nurses who were available and working in ICU, CCU and Emergency departments at the time of data collection.
- ✓ Nurses who had 1 year and over experience.

4.5.2 Exclusion criteria

- ✓ Nurses who were on maternal, annual and sick leave during data collection.

4.6 Sample size determination

All nurses working in ICU, CCU and emergency departments of the selected governmental hospitals who fulfill the inclusion criteria were included by non-probability survey sampling.

The number of acute care nurses in Tikur Anbesa specialized hospital, St Paul's hospital and St Peter hospital are 122, 92, and 55 respectively. The total number of nurses are 269.

4.7 Sampling technique and procedure

Non probability purposive sampling technique was employed to select 3 hospitals due to availability of cardiac unit. Then all acute care nurses or working in ICU CCU and Emergency department were included under the study by censes method.

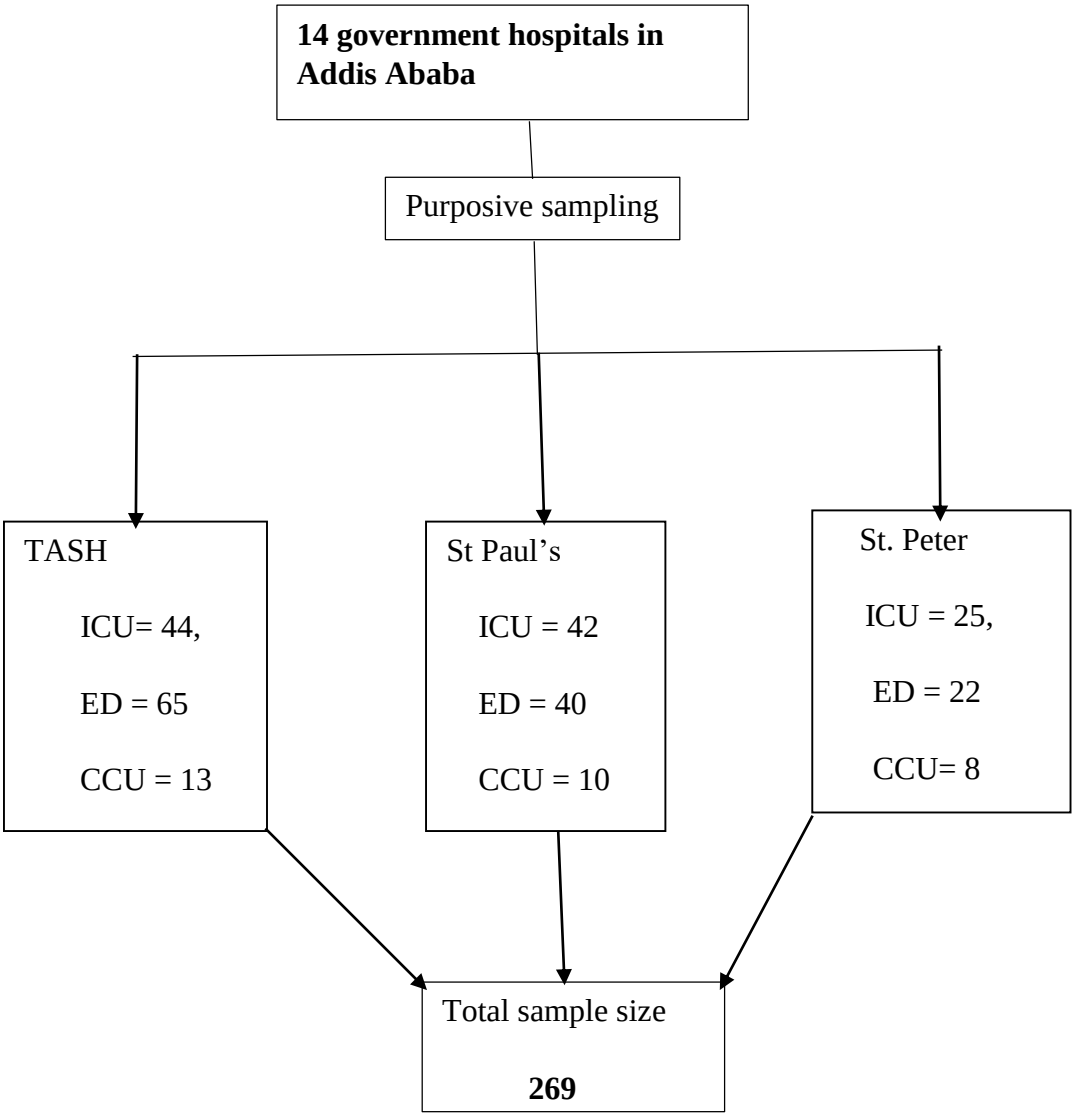

Figure 2 schematic presentation of sampling procedure

4.8 Operational definition

Acute coronary syndrome: is a syndrome due to decreased blood flow in the coronary arteries as a result part of the heart muscle is unable to function properly or dies.

Acute care nurses: Refers to nurses involving in the acute care of acute coronary syndrome.

Knowledge: This refers to nurse's knowledge acquired through education or experience, and the theoretical or practical understanding of ACS care.

Good knowledge: refers for those study participants who scored point more than a mean value of knowledge questions.

Poor knowledge: refers for those study participants who score equal to or less than a mean value of knowledge questions.

Practice: This describes the nurses 'habitual, or expected procedure or way of methods of ACS care.

Good Practice: refers to those study participants who correctly respond to practice questions and score above mean value.

Poor practice: refers to those study participants who correctly respond to practice questions and score equal to or less than a mean value.

4.9 Study variables

4.9.1 Dependent variable

- Knowledge of nurses regarding care of acute coronary syndrome
- Practice of nurses regarding care of acute coronary syndrome.

4.9.2 Independent variable

- Socio demographic factors: Age, gender, year of experience, working unit, monthly income and level of education.
- Personal factors: knowledge, poor adherence to guidelines.
- Institutional factors: Training, availability of guidelines, resource and work load.

4.10 Data collection tool

Data was collected by using structured self-administered questionnaire. It was consists of four parts the first part was containing information on socio demographic data of participants. The second part was information regarding knowledge composed of (15)

closed ended questions which includes multiple choice questions. The sum score was classified in to two levels, good and poor knowledge based on mean value. The third part was information regarding practice composed of 33 practice check list questions which includes always, often, sometimes rarely and never response according to likert scale. Then the sum score was classified in to two levels, good and poor knowledge based on mean value. The fourth part containing associated factors composed of 7 questions which includes yes or no responses. The knowledge and practice questions adapted from similar study conducted in Sudan with some modification and the associated factors question prepared by the principal investigator by reviewing different literatures.

4.11 Data collection procedure

Data collectors was recruited from each selected hospitals outside staff. Before the actual work, a one-day training was given to data collectors on the objectives of the study, data collection tool, methods of reporting to supervisors and principal investigators.

4.12 Data processing and analysis

Data was entered into Epi-info version 7 software to minimize data entry error and exported for analysis to SPSS version 25, and then analyzing was done. To explain the study population in relation to relevant variables, descriptive statistics such as means, standard deviation frequency and percentage were used to describe socio demographic variables. Binary logistic regression and multi variable logistic regression were used to determine association between dependent and independent variables. The variable in bivariate analysis with p-value < 0.25 were entered to multivariate logistic regression. The strength of association of factors with knowledge and practice was demonstrated by computing odds ratio (OR) and the adjusted odds ratio (AOR) with a 95% confidence interval (CI).

4.13 Data quality assurance

The quality of data was assured through careful designing of questionnaires. Before actual data collection time the questionnaire (tool) was checked for clarity comprehensiveness and content validity as well as it was pretested for on 5% of the total sample at Alert hospital there by possible adjustment or modification was made on the tool. The reliability test was done and the cronbach alpha p= 0.85. Data collectors were instructed to check the

completeness of each questionnaire whether each and every question is completely answered and also the supervisor was rechecking the completeness of the questionnaire after submission.

4.14 Ethical consideration

Ethical approval for the study was obtained from College of health sciences ethical review committee. A support letter was taken from department of nursing and midwifery for permission to conduct the study. After obtaining official letter from the department a permission letter was provided to five selected hospitals before data collection. An information sheet on the purpose and procedure of the study, benefits of the study, privacy and confidentiality issues, voluntary participation and their right to withdraw from the study was provided to the participants. Written consent was provided for participants for guaranteeing their choice of participation or refusal.

4.15 Dissemination of result

Main findings of the study will be reported to each selected hospitals. It will be presented to Addis Ababa University, college of health sciences, department of nursing and midwifery. The hard and soft copy of findings will also be available in the library of Addis Ababa University Tikur Anbessa. The paper will also be submitted to national and international peer reviewed scientific journals for possible publications.

5. RESULT

5.1 Socio demographic characteristics of the respondents

Out of 265 nurses expected to be participated in the study, 252 nurses gave complete response making response rate of 95.2%. From these, almost 60% were males. The mean age 28.91 (SD 4.48), most (84.5%) were BSc holders, more than half 55.2% were single and more than half (54.4%) of the study participants had 4-7 years of experience.

Table 1 Socio demographic characteristics of acute care nurses at selected hospitals of Addis Ababa Ethiopia 2021. (n = 252)

Variables	Group	Frequency	Percent
Age	24-29	169	67.1
	30-34	57	22.6
	35-40	24	9.5
	>40	2	0.8
Gender	Male	150	59.5
	Female	102	40.5
Marital status	Single	139	55.2
	Married	113	44.8
Level education	BSc	213	84.5
	Masters	39	15.5
Year of experience	1-3	79	31.3
	4-7	137	54.4
	>8	36	14.3
Monthly income	4000-6000	60	23.8
	6001-8000	135	53.6
	>8000	57	22.6
Department	ICU	100	39.7
	Emergency	120	47.6
	CCU	32	12.7

5.2 Knowledge of acute care nurses regarding care of acute coronary syndrome

The mean score of the respondent's knowledge regarding care of acute coronary syndrome was 54.07%. The percentage of correct responses to individual questions ranged from 22 to 92%. As figure 4 showed that out of 250 study participants 121(48%) of the study participants had poor knowledge and 131 (52%) of participants had good knowledge regarding care of acute coronary syndrome.

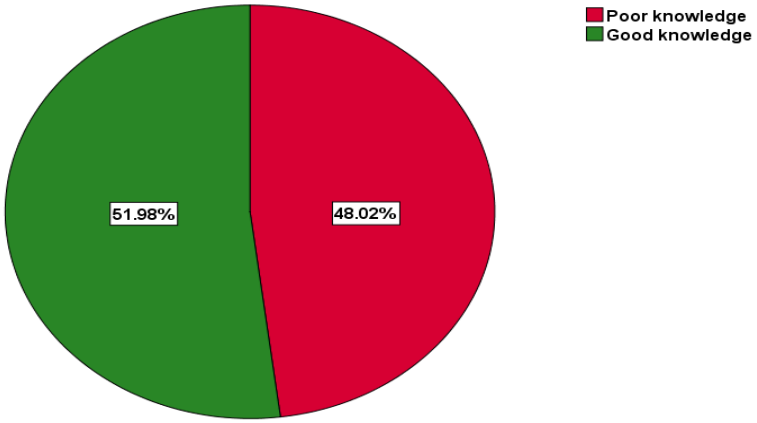

Figure 3:- knowledge of acute care nurses regarding care of acute coronary syndrome working at selected hospitals of Addis Ababa, Ethiopia 2021

5.3 Practice of study participants regarding care of acute coronary syndrome

In this study it was showed that the mean score for nurse's practice regarding care of acute coronary syndrome was 3.178 from 5 point likert scales. As shown in figure 3 out of 252 study participants nearly half of them, 112(44.4%) had poor practice and that of 140(55.6%) had good practice.

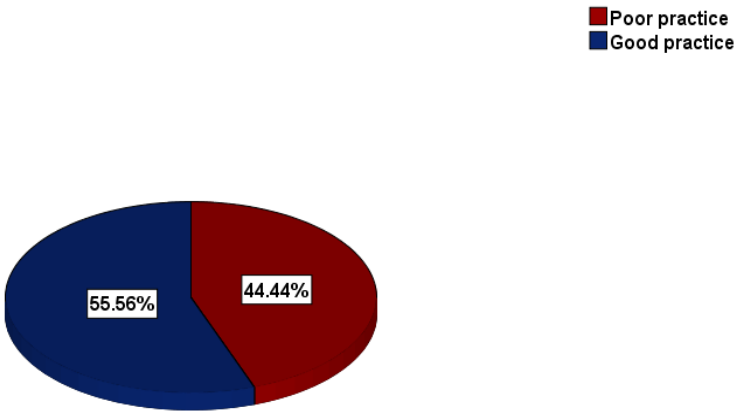

Figure 4:- Practice of acute care nurses regarding care of acute coronary syndrome working at selected hospitals of Addis Ababa, Ethiopia 2021

Table 2 The mean score knowledge and practice of acute care nurses regarding care of acute coronary syndrome working at selected hospitals of Addis Ababa, Ethiopia 2021

Variables		N	% percentage	Mean
Knowledge	Good	131	52	54%
	Poor	121	48	
Practice	Good	140	55.6	63.5%
	Poor	112	44.4	

5.4 Factors associated with nurses' knowledge and Practice regarding care of acute coronary syndrome.

A Binary logistic regression and multinomial logistic regreression model was used for analysis between dependent & independent variables. P value < 0.05 is statically significant for both binary and multi nominal logistic regression. Binary logistic regression was used to select variables needed to be entered in to multivariable binary logistic regression by using p value =0.25 as a cut point to include more variable.

5.4.1 Factors associated with nurses' knowledge regarding care of ACS

In bivariate logistic regression, educational level, department or working unit, received training, monthly income, availability of guidelines in working unit and availability of diagnostic necessities were significantly associated with nurse's knowledge of acute coronary syndrome. But according to multivariate two factors had significant association with nurse's knowledge of acute coronary syndrome care (received training and availability of guidelines). The odds of knowledge who provides management guidelines in their working have almost 7 times (AOR= 7.2, 95%CI (1.5-34.4), P value=0.000) good knowledge on acute coronary syndrome care than nurses those didn't have management guidelines in their working unit regarding ACS care. The odds of nurses who had taken in-service training on acute coronary syndrome also 9 folds (AOR=9.2, 95%CI (3.4-25.29), P value=0.000) higher to have good knowledge compared to those who had never taken in-service training on acute coronary syndrome.

Table 3:- Knowledge of nurses and associated factors regarding care of ACS at selected hospitals of Addis Ababa, Ethiopia, 2021.

			Knowledge				
Variable	Category	Good	Poor	P value	COR 95%CI	P value	AOR 95% CI
Work load	No	36(37.7%)	24(38.5%)		2.5(1.32-4.65)	.78	1.1(.54-2.2)
	Yes	95(14.3%)	97(9.5%)	1		1	
Monthly Income	4000-6000	22(8.7%)	38(15.1%)	1		1	
	6000-8000	71(28.2%)	61(25.4%)		1.9(1.02,5.07)	.72	.85(.37-2.26)
	>8000	38(15.1%)	19(17.5%)		3.5(1.6,7.39)	.13	.58(.2-1.17)
Training	Yes	52(20.6%)	6(2.4%)		12.6(5.2,30.8)	.000	9.2(3.4,25.29)
	No	79(31.3)	115(45.6)	1		s1	
Education Level	BSc	98(38.9%)	115(45.6%	1			
	Master	33(13.1%)	6(2.4%)		6.5(2.6,16.04)	.059	3(.95-10.51)
Availability of guidelines	Yes	29(12%)	2(10.8%)		17(3.94,72.6)	.000	7.2(1.5,34.4)
	No	102(40%)	119(47.2%	1		1	
Department	ER	65(25.8%)	55(21.8%)	1		1	
	ICU	42(16.7%)	58(23%)		1.6(.95,2.78)	.616	1.3(.4-4.65)
	CCU	24(19.5%)	8(3.2%)		4.14(1.7,10.1)	.225	1.4(.79-2.68)
Availability Diagnostic Necessities	Yes	44(17.5%)	25(9.9%)		1.94(1.09,3.4)	.50	.76(.34-1.68)
	No	87(34.5%)	96(38.1%)	1		1	

5.4.2 Factors associated with nurses' Practice regarding care of acute coronary syndrome

Bivariate logistic regression analysis was made for all variables. All variables with a p-value of less than 0.25 were entered together into a multivariate logistic regression and P-value less than or equal to 0.05 during multivariate analysis was taken as a cut point value to be significant. Based on these the result of multiple logistic regression showed that the odds of nurses working in CCU department was found about almost 6 times higher to have good practice regarding care of acute coronary syndrome (AOR=6.4, 95% CI=1.46-28.4, P=0.014) than nurses working in emergency department. The odds of nurses working in ICU department was also found about almost 2 times higher to have good practice regarding care of acute coronary syndrome (AOR=1.9, 95% CI=0.95-2.766, P=0.032) than nurses working in emergency department. On the other hand, the odds of nurses those taken previous training also found that about almost 10 times higher to have good practice regarding care of acute coronary syndrome. (AOR= 9.7 95% CI (3.33-28.5) P value= .000 than those not taken training.

Table 4:- practice of nurses and associated factors regarding care of ACS working at selected hospitals of Addis Ababa, Ethiopia, 2021.

		Practice					
Variable	Category	Good	Poor	P value	COR 95%CI	P value	AOR 95% CI
Knowledge	Good	81(32.1%)	50(19.8%)		1.7(1.03,2.8)	.27	1.4(.74-2.74)
	Poor	59(23.4%)	62(24.6%)	1		1	
Monthly Income	4000-6000	22(8.7%)	38(15.1%)	1		1	
	6000-8000	71(28.2%)	64(25.4%)		1.9(1.02,3.57)	.793	1.1(.37-3.6)
	>8000	47(18.7%)	10(4.0%)		8.1(3.4,19.2)	.124	2.8(.75-10.6)
Training	Yes	55(21.8%)	3(1.2%)		11.4(4.7,27.8)	.000	9.7(3.33,28.5)
	No	85(33.7%)	109(43.3)	1		1	
Education Level	BSc	107(42.5)	106(42.1%	1		1	
	Master	33(13.1%)	6(2.4%)		5.5(2.2,13.54)	.39	1.7(.48-6.14)
Availability of guidelines	Yes	26(10.3%)	2(10.8%)		4.9(1.8,13.17)	.447	1.6(.45-6.08)
	No	114(45.2)	107(42.5%	1		1	
Department	ER	54(21.4%)	66(26.2%)	1		1	
	ICU	57(22.6%)	43(17.1%)		1.6(.95,2.766)	.032	1.9(1.06,3.75)
	CCU	29(11.5%)	3(1.2%)		11.8(3.4,40.9)	.014	6.4(1.46,28.4)
Work load	Yes	97(38.5%)	17(6.1%)	1			
	No	43(17.1%)	95(37.7%)		2.5(1.32,4.65)	.145	1.7(.82-3.7)
Availability of treatment Necessities	Yes	57(22.6%)	21(8.3%)		2.99(1.62,5.51)	.47	1.3(.60-3.0)
	No	83(32.9%)	91(36.1%)				
Availability ofdiagnostic Necessities	Yes	51(20.2%)	18(7.1%)		3(1.62,5.51)	.97	1.04(.43-2.51)
	No	89(35.3%)	91(37.3%)	1		1	

6. DISCUSTION

The main purpose of this research was to examine the overall knowledge and practice of nurse's and its associated factors regarding care of acute coronary syndrome. In both the national and international contexts, studies that specifically aim to address the problems are limited. The study has attempted to address this by assessing the level of knowledge and practice regarding care of acute coronary syndrome and identifying factors associated with care of acute coronary syndrome.

The present study showed that inadequate knowledge of acute coronary syndrome care among acute care nurses working in the study settings. The percentage of correct responses to individual questions ranged from 22 to 92%. The mean score for the study participants was 54%.

This result agreed with, a study in the Albany state university reported low levels of nurses' knowledge towards acute coronary syndrome care, with correct answers ranging between 25 to 83.3% and mean score 58.3% SD= 0,13 (37).

Similarly a descriptive study conducted in Khartoum state, Sudan to determine nurses' knowledge about initial drugs used during emergency management of acute myocardial infarction revealed that greater than half (60%) of study participants had poor knowledge(40).

This knowledge deficit in the area hinders the outcome of patients with acute coronary syndrome. An acute care nurse should have high-level critical thinking skills within the nursing process and knowledge base is a vital for independent judgments and timely decision making. Study recommend that an acute care nurses must be an expert clinician who can recognize sign, symptoms and complications of acute coronary syndrome at the earliest stages to improve patient outcome.

The finding of this study showed nearly half of the participant 112(44.4%) had poor practice regarding care of acute coronary syndrome. This finding is slightly lower than a study done in Asia (32.8%) had in adequate practice. The difference can be possibly explained by the operation of the score level, because the present study classifies the score based on the average mean in to dichotomies outcome (poor and good) while the previous

was classified in to three levels (inadequate, moderate and adequate) practice (42). Nurses are a front line in the care of such acute illness. The result of the present study showed the care of patients with acute coronary syndrome remains challenged. In so far as in hospital mortality of acute coronary syndrome was high according to a study conducted in Tikur Anbessa and Ayder hospital, Ethiopia (16, 17).

Concerning factors related to nurse's knowledge regarding care of acute coronary syndrome; this study found that there have been a strong association between nurse's knowledge and training. Study agreed that training had a significant effect on the acquisition of knowledge regarding acute coronary syndrome among acute care nurses(33). However in the present study out of 252 participated in the study only 58(23%) actually taking training related to acute coronary syndrome care. Availability of guidelines also a significant association with acute care nurses knowledge regarding care of acute coronary syndrome. The result supported by in depth interview study conducted in Kenyatta National Hospital the study reviled that lack of hospital wide ACS guidelines was major barriers to ACS care (44). It is necessary to overcome these barriers for a better health outcome. A according to a study conducted in Minas Gerais state, Brazil training strategy had an impact on nurse's knowledge acquisition (47).

This study also found that training and working department had a significant association with nurse's practice regarding care of acute coronary syndrome. This result supported by studies conducted in northern Tanzania and Kenyatta National Hospitals (14, 44). Nurses working in CCU had higher practice than nurses working in ICU and Emergency. This may be due to training. From the total CCU nurses almost half 53% had taken training related to acute coronary syndrome. However only 21.7% and 18.0% had taken training related to acute coronary syndrome from the total nurses working in Emergency and ICU department respectively.

7. LIMITATIONS & STRENGTH OF THE STUDY

LIMITATIONS

This study used self-administered questionnaire, the study may be subjected to response bias from each respondent.

No adequate literatures were found on similar topic especially in Ethiopian context making it difficult for comparison.

STRENGTH

The study conducted was conduct in hospitals that have almost similar setting and the first study in Ethiopia.

Pre-test was done before actual administration of the prepared tool at actual subjects. The reliability test cronbach alpha is 0.85.

8. CONCLUSION AND RECOMMENDATIONS

8.1 CONCLUSION

Based on the finding of this study we concluded that patients with acute coronary syndrome may not get adequate care by acute care nurses. Primarily because of inadequate knowledge and skill of acute care nurses. This knowledge deficit may have a negative impact on patient's outcome and on the quality of nurse's practice and health care delivery. Training and guidelines are a major contributing factors. This can be improved by providing management guidelines in their working unit and also training regarding acute coronary syndrome is vital to all acute care nurses to improve their knowledge and practice.

8.2 RECOMMENDATIONS

The study forwards the following recommendations to responsible bodies

To Federal Ministry of Health and policy maker

Should be committed to effective ACS care by developing standard and updated ACS care guidelines and create satisfied nursing professions.

To Hospitals

They are recommended to adjust in service training programs for all nurses in order to increase their knowledge and practice towards ACS care and avail guidelines related to ACS care.

To nurses

Recommended to have self-learning strategies; should update their knowledge regarding care of acute coronary syndrome through continuous professional development, regular in-service short-term training, and on-line reading.

To researcher

Recommended to carry out large scale and multi professional studies in order to address the problem.

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APPENDIX

Annex I: Participants information sheet

Hello, my name is Bizuayehu Ashine a post graduate student pursuing a Master of Science in Cardiovascular nursing, Department of nursing at Addis Ababa University. I kindly request you to give me you're a few minutes to fill this self-administered questionnaire about the study and be selected as the study participant.

Objectives of the study: the main aim of this study is to assess knowledge, practice and associated factors of acute care nurses regarding care of acute coronary syndrome working at selected hospitals of Addis Ababa, Ethiopia 2021

Confidentiality: the collected information will be kept confidential and used only for research purposes. The personal information of the respondents will not be notified. The findings of the study will be generalized for the study population and it will not reflect anything specific of individual participants.

Benefits of the study: For your participation in the study no payment will be granted or has no any special privilege to you. But, participating in the study and giving your genuine information will provide great input to bring change in quality of health service to ACS care.

Risks of the study: The procedure does not bear any physical or psychological trauma, but only taking few minutes of your time. Furthermore, you will not be forced to respond to information you do not know.

Rights: Participation in this study is fully voluntary. You have the right to declare to participate or not in this study. If you decide to participate, you are given the right to with draw from the study at any time and also, you have the right not to answer that you do not want to answer.

Contact address: If you have any questions or enquires any time about the study or procedures, please contact the principal investigator by the following address.

- Principal investigator: Bizuayehu Ashine
- E -mail: bizuayehu.ashine@gmail.com Mobile phone: +251-983-35-69-63.

Having stated information above, would you like to participate in this study?

1. Yes _____
2. No _____

Thank you for your collaboration!!

Annex II Participants consent

I have read the participant information sheet. I have clearly understood the purpose of the research, the procedure, risks and benefits, issues of confidentiality, the rights of participating and the contact address for any questions. I have been given the opportunity to ask questions for things that may have been unclear. I was informed that participants have the right to withdraw from the study at any time or not to respond any question that they do not want. I understand that my decision to participate or not to participate in this study will not have any reward or punishment. In the use of information generated from this study such as presentations and publications, my identity will remain anonymous. The records of the study must be available to only authorized study personnel. Therefore I am voluntarily agreeing to participate.

Volunteer's signature---------- Date ----------

Name and Signature of head of the Hospital: _____Date _____

Name and Signature of Data Collector: _____ Date _____

Thank you for your collaboration!!!

Annex III Questionnaire

Part I: Socio demographic characteristics of the respondents

S. no	Question	Responses
101	Gender	1) Male 2) Female
102	Age in years	_____
103	Monthly Income	
104	Educational level	1. Diploma 3. Master's degree 2. BSc degree 4. Doctorate degree
105	Year of experience	_____
106	Department	1. ICU 2. Emergency 3. CCU

Part II: Knowledge Questions

Note: Please circle all the right answer. You can choose more than one answer:

S.N	Questions	Responses
201	Acute coronary syndrome can define as:	1. ST elevation myocardial infarction 2. non ST elevation myocardial infarction 3. unstable angina 4. Stable angina
202	Totally occluded artery on ECG reveals	1. ST elevation myocardial infarction 2. non ST elevation myocardial infarction 3. unstable angina 4. Stable angina
203	Causes and risk factors of ACS:	1. Hyperlipidemia 2. Diabetes millets 3. Hypertension 4. Age and family history
204	Symptoms of ACS Include:	1. Chest pain 2. Short ness of breath

		3. Sweating 4. Nausea and vomiting
205	Common diagnostic test	1. ECG 2. Cardiac marker 3. Echocardiography 4. Laboratory test
206	Site of chest pain	1. Center of chest 2. Lower back 3. Around umbilical 4. Apex
207	Nature of ACS pain	1. heaviness 2. stabbing 3. tingling 4. colic
208	Onset of ACS pain	1. gradually 2. layer after other sign and symptom 3. last sign 4. sudden
209	common aggravate factors	1. physical excretion 2. stress 3. eating heavy meal 4. exposure to cold
210	Pain management includes:	1. Put patients in comfortable position 2. Give IV morphine 3. Supplemental oxygen 4. Nitroglycerines
211	Obtain ECG from patient	1. within first 10 minute of report chest pain 2. after 2 hours of chest pain 3. after treatment 4. not need

212	Common methods used to reduce anxiety	1. quit environment 2. teaching relaxation technique 3. spiritual support 4. medication
213	Common medication used	1. Morphine 2. nitroglycerin 3. antiplatelet and anticoagulant 4. anti-ischemic medication
214	Role of nursing in management	1. administer oxygen 2. ECG+ cardiac monitoring 3. Pain and anxiety management 4. Observe medication side effect
215	Common complications of ACS	1. Conduction disturbance 2. Hemodynamic disturbance 3. Heart failure 4. Stroke and death

Part III: Practice questions

Instruction: For each of the following questions please write "X" under always if you perform every day and under some times if you perform seldom and under Never if you don`t do any time.

s/n	Questions	Always	Some times	Never
301	**Your practice on Assessing & reducing pain:**			
	Assessing pain regularly (location duration severity reliving & aggravating factor) self-reporting pain facial expression.			
	Total rest & put patient on cardiac position.			
	Administering O2 to reduce myocardial demand.			

	Nitrate therapy to reduce pain.			
	Analgesia (morphine + anti emetic).			
	Obtain ECG during pain.			
302	**Your practice on Assessing & reduction anxiety includes:**			
	Assess patient and anxiety level by observing for verbal & nonverbal sign of anxiety.			
	Insuring quiet environment.			
	Teaching relaxation technique.			
	Spiritual support consist with patient belief			
	Provide frequent & private chance to share fear & feeling.			
303	**Your practice on Monitoring & managing potential complication includes:**			
	Close monitor for HR, rhythm, sound, BP, chest pain, RR, urinary output, temperature, skin color, ECG change, lab test value, and report any change in patient condition			
	Provide effective education about ACS			
304	**Your practice on Nutritional Advice:**			
	Initially, keep the patient on nothing by mouth until his or her condition has been stabilized and treated.			
	Following initial therapy advice to eat diet low in saturated fat.			
	Advice to Increase fiber diet and decrease sodium diet to 2 g			
305	**Your practice on Activity counseling:**			
	Initially kept on bed rest.			

	Increase activity gradually.			
	Advice to avoid weight lifting.			
	Counsel to walking daily increase distance and time According to physician order.			
306	**Your practice on Risk factor and chronic disease advice:**			
	Asking about history of chronic disease (HTN, DM, cholesterol).			
	Asking about follow up for this disease. Smoking history, stop smoking			
	Advice to lose the weight if obese.			
307	**Your practice on Medication** :			
	administer medication appropriately			
	Carry nitro glycerin at all time.			
	Instruction about use medication and side effect of medication.			
	Advice to avoid over counter medication			
	Ask about chronic medication use.			
308	**Your practice on Follow up care counseling**:			
	Advice to Achieve and maintain normal BP and Blood group.			
	Advice to follow ECG, lab test and medication.			
	Advice about Life style modification.			
	Advice to seek medical care if any S & S (SOB, fainting, HR, Swelling ankle).			
	Counsel to attend cardiac refer regularly			

Part IV: Factors affecting knowledge and practice of nurses regarding care of acute coronary syndrome.

No	Questions	Response	Remark
401	Do you have acute coronary syndrome management guideline or standard tool in your working unit?	1. Yes 2. No	If no skip to 403
402	If the answer is yes, do you follow the guideline to provide care for patient with ACS	1. Yes 2. No	
403	Do you have adequate diagnostic necessities to provide care for patient with ACS?	1. Yes 2. No	
404	Do you have adequate treatment necessities to provide care for patient with ACS?	1. Yes 2. No	
405	Do you have shortage of time or work load to provide care for ACS patient	1. Yes 2. No	
406	Have you received training related to ACS care during your professional Development?	1. Yes 2. No	
407	What other factor affects your knowledge and practice in the care of ACS? _____		

Thank you for your participation!