ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCES
SCHOOL OF NURSING AND MIDWIFERY
DEPARTEMENT OF NURSING

KNOWLEDGE, ATTITUDE AND ASSOCIATED FACTORS TOWARDS HEART FAILURE MANAGEMENT AMONG NURSES WORKING IN CARDIAC UNIT OF SELECTED GOVERMENT HOSPITALS, ADDIS ABABA, ETHIOPIA, 2020

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This thesis by Betelhem Mesfin is accepted in its present form by the board of examiners as satisfying thesis requirement for the degree of masters in Adult health nursing.

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STATEMENT OF DECLARATION

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This thesis is submitted in partial fulfilment of the requirement for a graduate degree from the Addis Ababa University at College of Health Sciences, School of Nursing and Midwifery, department of nursing. The thesis is deposited in the Addis Ababa University Digital Library and is made available to local, national and international scientific community. I solemnly declare that this thesis has not been submitted to any other institution anywhere for the award of any academic degree, diploma or certificate.

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ABBRIVIATIONS AND ACRONYMS

CVD	Cardiovascular Disease
HF	Heart failure
PC	Primary care
SSA	Sub Saharan Africa
SPSS	Statistics package for social science
WHO	World Health Organization

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ABSTRACT

Pharmacologic, surgical and lifestyle management are the three essential strategies in heart failure management and nurses have a critical input in each of these strategies. The key roles for the nurse in the management of heart failure have largely focused on the follow up and monitoring and provide education about heart failure for the patient. However, there is often a mismatch between a patent's understanding of their heart failure management and the information provided by the health professional so the objectives of this study was to assess knowledge, attitude and associated factors towards heart failure management among nurses working in cardiac unit at selected government hospitals in Addis Ababa, Ethiopia, 2020. Institution based cross sectional study design was conducted among nurses working in cardiac unit at selected government hospitals of Addis Ababa from March to April 2020. 199 nurses who fulfil the inclusion criteria were recruited from selected governmental hospitals by census method. Descriptive statistics such as mean, standard deviation and percentages are calculated and binary and multivariable logistic regressions were computed to evaluate the association. The study findings revealed that nurses had poor knowledge and positive attitude towards management of heart failure. There were a significant association with age, level of education, year of experience and training with nurse's knowledge towards heart failure management. The deficient knowledge would certainly have a negative impact on the quality of their practice, and consequently on patients' outcomes. They need training and standard tool as a guideline for heart failure management to improve their knowledge.

Key words; Knowledge, attitude, nurses, heart failure and heart failure management

CHAPTER ONE INTRODUCTION

1.1 Background

Non-communicable diseases are the leading causes of death globally; available data demonstrate that almost 80% of deaths due to non-communicable diseases occur in low- and middle-income countries World Health Organization (WHO) estimated in 2011 that 34% of Ethiopian population is dying from non-communicable diseases, with a national cardiovascular disease prevalence of 15% (1).

In the context of chronic diseases, cardiovascular diseases are liable for high morbidity and mortality rates and a rise in hospital admissions, with a rise publicly health expenditures and a consequent decrease within the quality of lifetime of people affected (2).

Among the cardio vascular diseases (CVDs), one is heart failure, the end of most heart diseases (3). Coronary failure may be a clinical syndrome during which the guts cannot pump adequate amount of blood to support the metabolic demands of the body (4). The foremost common cause for HF is reduced left ventricular myocardial function; however, dysfunction of the pericardium, myocardium, endocardium, heart valves or great vessels alone or together is additionally related to HF (5). HF is marked by sudden changes in condition the progression of the condition is related to serious symptoms, most ordinarily dyspnea and fatigue also as patients with HF experience physical functional losses and a spread of psychosocial and socioeconomic concerns that affect overall QOL (6).

In sub-Saharan Africa heart failure is a disease of young and middle age group. It's common between the third and fifth decade of life with the mean age range from 36.5 to 61.5 years (7). In Ethiopia, the burden of premature death and disability from non communicable diseases has significant effects which cause 42% of death, of which 27% premature death before 70 years of age. Among the foremost populous nation in Africa, Ethiopia is the first expected country to ascertain dramatic increases by 2040 (8).

Recent advances within the management of HF have improved outcome, largely as a results of the developing evidence basis for medications, implantable devices and therefore the organization of coronary failure patient follow-up, yet patients remain at increased risk of hospitalization and death (9).

Delivery of care with multidisciplinary management programmes involving; patients, physicians, nurses, family and care takers, improve outcomes through structured follow-up with patient education, optimization of medical treatment, psychosocial support and improved access to care, such strategies reduce HF hospitalization and mortality (10).

Pharmacologic, surgical and lifestyle management are the three essential strategies in heart coronary failure management and nurses have a critical input in each of those strategies in both inpatient and outpatient settings (4). Adherence and management of a prescribed medication regimen, dietary changes, symptom recognition education and fluid restrictions are a number of the life-style modifications included within the management of HF (11).

The key roles for the nurse within the management of coronary failure have largely focused on the follow up and monitoring of patients at high risk of hospital re admission provide education about coronary failure helps to acknowledge coronary failure early before its worsening and reduce hospital admission. However, there's often a mismatch between a patent’s understanding of their coronary failure management and therefore the information provided by the health care provider (12).

For this reason effective coronary failure management requires a knowledgeable nurse with favourable attitude in practicing coronary failure management. Therefore within the knowledge of researcher there's a limited study in Ethiopia in order that the researcher will specialise in assessment of data, attitude and associated factors towards coronary failure management among nurses working in cardiac unit.

1.2 Statement of the problem

Heart failure (HF) may be a global pandemic disease and affecting a minimum of 26 million people worldwide, within the united state 5.7 million peoples have coronary failure, the projections are worrisome since it's expected that by 2030 quite 8 million people will have this condition, accounting for a 46 to extend in prevalence (13).

HF may be a leading explanation for morbidity, hospitalization, and mortality in older adults and a growing public ill health placing an enormous financial burden on the health care system (14). In 2012 it had been liable for 31 billion dollar health expenditure in united state and in developing countries about 15.1 million dollar was spent on the care of coronary failure (13).

According to the study on global burden of chronic coronary failure, the worldwide prevalence of coronary failure rise altogether countries and it contributes over 10% of deaths in high income countries and 28% of deaths in low- and middle- income countries (15). As the 12 month European data demonstrate that, mortality rates for hospitalized and stable/ambulatory HF patients were 17% and 7%, respectively and hospitalization rates were 44% and 32% respectively (16).

It is also a growing problem in sub- Saharan Africa and patients with coronary failure commonly present both for admission and in the outpatient setting (17). Even though there is lack of population based incidence and prevalence study in SSA, the report hospital prevalence indicate that heart failure is responsible for 9.4 – 42.5 of all medical admission and 25.6 – 30% of admission in to the cardiac unit (7). Lack of treatment guidelines are major challenge to provide adequate health care service for patient with non communicable chronic disease like cardiovascular diseases, among those coronary failure is the one (8).

Patient could also be more vulnerable to readmission and adverse outcome if the nurses don’t provide patient education in acute care facility before discharge. Therefore, lack of proper symptom monitoring, patient education and proper medical follow up increase hospital readmission (18).

The coronary failure Society of America’s 2010 Comprehensive Heart Failure Practice Guideline provides a robust evidence base for the importance of chronic HF management especially in relation to pharmacologic management and therefore the need for

comprehensive education and counselling to assist patients, their families, and their caregivers in learning how to manage this complex chronic disease (19).

Patients with coronary failure need education so as to adapt to their chronic syndrome and perform self-care so nurses are increasingly involved in this area with educating patients about their chronic illness and instructing them in disease self-management (20).

To my knowledge there are limited studies available that assess the nurse's knowledge and attitude towards coronary failure management in cardiac units. Therefore, the aim of this study was to assess knowledge, attitude and associated factor towards heart failure management among nurses working in cardiac unit at selected government hospitals in Addis Ababa.

1.3 Significance of the study

There are limited researches done on the assessment of knowledge, attitude and associated factor towards coronary failure management among nurses in Ethiopia. Therefore result of this study may contribute some importance for the hospital also the country in drawing the attention of the policy makers, health care mangers and health care professionals especially nurses so on stimulate them to require appropriate measures to its management and pointing researchers to look at it as one of the area of investigation and for the patients. Further, the result of the study often used as a baseline data for further related studies and it'll establish baseline information about current knowledge and attitude of nurses towards coronary failure management.

This study benefit to the policy makers by identifying the gaps of nurses on coronary failure management that helps to organize guideline for nurses towards management of patient with coronary failure. This may help for nurse's educators to give great emphasis on coronary failure management and for improvement of health care delivery system and this may positively reflect on improving the standard of lifetime of patients with coronary failure and hopefully decrease hospital admission rates which successively cause decrease in medical costs.

Finally, it will benefit those nurses to ascertain them and respond accordingly, in order that they will put their own effort on updating their knowledge through reading or taking short term training. This benefit the individual patients by improving the quality of their life as nurses' knowledge, attitude gaps as well as factors identified and corrected.

CHAPTER TWO LITRATURE REVIEW

In this literature review, coronary failure management is explored from nurses' perspectives to know their knowledge and attitude towards coronary failure management. The review is employed purposefully in gathering data from previously done researches concerning nurses' knowledge, attitude and associated factors towards coronary failure management.

2.1. Nurses' knowledge towards heart failure management

According to the study conducted in United State, to explain nurses' knowledge of coronary failure self management education principles, sixty one nurses working within the community participated and completed a 20-item survey, assessing their knowledge of diet, fluids, weight changes, sign and symptoms of worsening condition, medications and exercise. Because the study reported that nurse's knowledge towards coronary failure management was low with correct answer starting from 14% to 100% with only 2 of 20 questions answered correctly by all participants. The study also report that questions focused on notification of the physician regarding vital sign, dizziness, weight monitoring and use of salt substitutes are frequently missed questions (21).

A study conducted during a small Midwestern community hospital to explain nurses' knowledge of HF self-management education principles, The sample included Fifty-one nurses, 14 nurses working in an medical care unit and 41 nurses performing on a general medical unit, completed a 20-item true or false written survey. Because the study showed that; most respondents 90% answered 6 questions correctly, 70% and 90% answered 9 questions correctly but 70% answered 5 questions correctly. Two questions were answered correctly by all participants. Supported these results nurses might not be sufficiently knowledgeable in HF management principles (22).

A study conducted in polish nurses, to assess nurses' knowledge of HF self-care principles, stated that HF self-care maintenance knowledge score was (M =12.1, SD =2.7) that equated to 60.4% and the study conclude that nurses had poor knowledge towards heart failure self-care management principles which may cause problems in providing patients with adequate education (23).

An observational, cross-sectional descriptive study conducted in the city of Barcelona, to determine the degree of knowledge of primary care (PC) nurses on the principles of self-

management of HF and variables related to this, as the study stated that out of 216 primary care nurses, the average score was (M=15.6, SD: 2.2) ,as the study conclude that primary care nurses have higher degree of knowledge (24).

2.2 Nurse's attitude towards heart failure management

A descriptive cross sectional study conducted in Bahrain hospital by H. Mohammed stated that nurses had positive attitude towards management of coronary failure the median total score was 3.83, thus approaching the "agree" score. The score could have been higher if the nurses had a more positive attitude towards patient feeling more secure in the Cardiac Care Unit when the medical team members are by his/her side all the time. (4).

According to the study conducted, among cardiovascular nurses attending a world conference in Norway and a national conference in Belgium, to explain the attitude of nurses towards family involvement in patient care, because the study stated that nurses viewed the family as important in care. However, attitudes towards actively inviting families to take part in patient care were less positive (25).

According to the study conducted in north-west Iran at Urmia university of medical science hospital, about 73.6% of nurses were unaware about importance of patient education and participants believed that patient education was not there duty, so based on this study the study participants have negative attitude towards patient education for management of coronary failure (26).

2.3 Factors associated with nurses knowledge and attitude towards management of heart failure

An observational, cross-sectional descriptive study, conducted in the city of Barcelona, to work out the degree of knowledge of primary care (PC) nurses on the principles of self-management of HF and variables related to this. The study showed that nurse's knowledge was higher in nurses who had received specific training in HF management (24).

A descriptive quantitative study is carried, at Al-Najaf City/Al-Najaf Al Ashraf Health Directorate / Al-Sadder Medical City to assess nurses' knowledge concerning management of patients with coronary failure and to seek out the connection between the nurses' knowledge and their demographic data. However, there is no significant association between nurse's knowledge and their demographic data in associated with gender, marital status and monthly income and significant association with age at p-value (0.013).

Furthermore the study indicated that, regarding year of experience, a highly significant association between year of experience and nurses knowledge, study conclude that nurses have less score 46.6% during the first year of experience, the nurses with 1-3 years of experience had 53.3% which considered as the second lowest average scores and the nurses who had 4-7 years of experience highest score 71.3%.

Moreover the above study also report that the significant association of level of education and nurses knowledge towards coronary failure management, because the study indicate there were significant association between level of education and nurse's knowledge towards heart failure management (27).

A Cross sectional study conducted in north-west Iran at Urmia university of medical science hospital also identify those barriers which affect the attitude of nurses, based on this study, the most important barrier of patient education are lack of interest of nurses to participation in patients' education, lack of educational resource and shortage of time (26).

George A. Heckman et.al., study conducted a scoping review of published coronary failure management guideline and intervention in nursing home, the result suggest that guideline based coronary failure management can improve nurses knowledge in addition clinical based education for staff and access to specialist mentorship are also important to improve nurses knowledge (28).

A quasi experimental study conducted to work out the effect of nursing educational program on nurse's knowledge toward management of coronary failure. As the study stated that the tutorial program about coronary failure management of patient with coronary failure was effective among nurses' knowledge. The study concludes that the tutorial program is appropriate and effective way to improve the nurses' knowledge concerning management of patient with coronary failure (29).

2.4 Conceptual Frame work

This conceptual frame work is based on different literature assessed major variables of the study are developed from literature review. Among these: socio demographic characteristics of health care providers, hospital related and nurse related factors are anticipated to affect the dependent variable of the study.

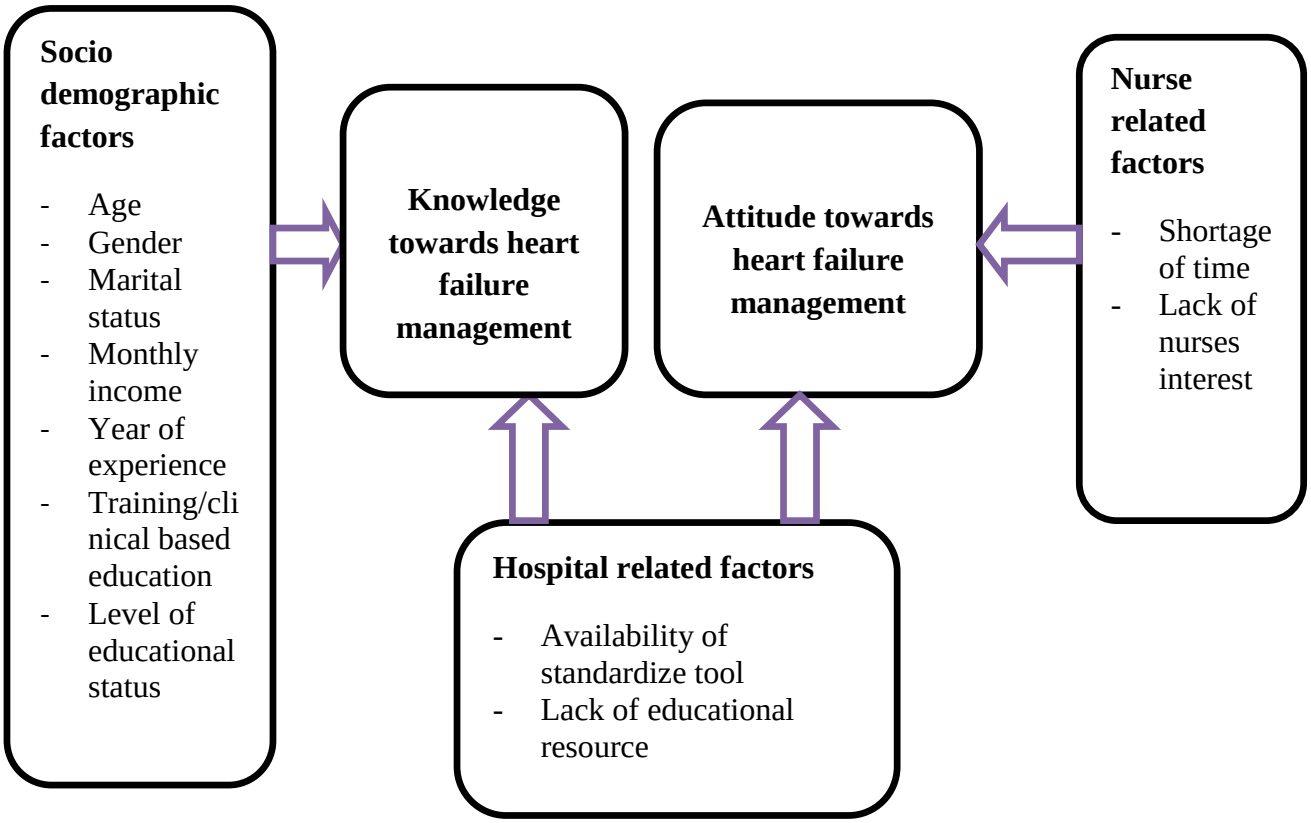

Figure 1 Conceptual frame work used for exploring knowledge, attitude and associated factors towards heart failure management among nurses working in cardiac unit of selected government hospitals, Addis Ababa, Ethiopia, 2020 (24, 26, 27, 28, 29).

CHAPTER THREE OBJECTIVES OF THE STUDY

3.1 General objective

- To assess knowledge, attitude and associated factor towards management of heart failure among nurses working in cardiac unit at selected governmental hospitals in Addis Ababa, Ethiopia, 2020.

3.2 Specific objectives

- To assess knowledge towards heart failure management among nurses working in cardiac unit of selected government hospitals.
- To assess attitude towards management of heart failure among nurses working in cardiac unit of selected government hospitals.
- To determine factors associated with knowledge and attitude towards heart failure management among nurses working in cardiac unit of selected government hospitals.

CHAPTER FOUR METHODS AND MATERIALS

4.1 Study area and study period

The study was conducted in Addis Ababa, the capital city of Ethiopia. Addis Ababa is a home to almost all ethnic groups in Ethiopia with estimated 6.6 million people by 2017. The city encompasses 6 zones and 28 woredas. The government hospitals in Addis Ababa are; Tikur Anbessa Specialized Hospital, Saint Paul hospital, Zewditu Hospital, Alert Hospital, Yekatit 12 Hospital, Ras Desta Damtew Memorial Hospital, Saint Peters Hospitals, Menilik II Hospital, Tirunesh Beijing Hospital, Armed Forces Hospital, Bella Defence hospital, Federal Police hospital, Amanuel Hospital and Gandhi Hospital. The study was conducted at three selected government Hospitals namely Tikur Anbessa Specialized Hospital, Saint Paul Hospital Millennium Medical College (SPHMMC) and Saint Peters specialized hospital. Those hospitals selected purposively because out of 14 government hospitals cardiac unit are present in these hospitals. This study was conducted in those selected hospitals starting from March to April 2020.

4.2 Study design

Institution based cross sectional study design was conducted.

4.3 Populations

4.3.1 Source population

All nurses working in cardiac unit at selected government hospitals.

4.3.2 Study population

Nurses, who are working in cardiac unit of selected government hospitals and who fulfil the inclusion criteria were study population.

4.3.3 Inclusion and exclusion criteria

4.4.3.1 Inclusion criteria

- Nurses who have worked for at least six months in the cardiac unit.

4.4.3.2 Exclusion criteria

- Nurses, who are off duty during data collection period.

4.4 Sampling technique and Sampling procedure

All staff nurses working in cardiac unit at selected government hospitals were included in Survey by census method. Those hospitals were selected purposively based on the availability of cardiac unit.

Table 1 the total number of nurses in each hospital

Name of selected hospitals	**Number of nurses**
Tikur Anbessa Specialized Hospital	82
Saint Paulos Hospital	65
Saint Peters Specialized Hospital	52
Total	**199**

4.7. Study Variable

4.7.1. Dependent Variables

- Knowledge towards heart failure management
- Attitude towards heart failure management

4.7.2. Independent Variables

Socio demographic factor

- Age
- Gender
- Marital status
- Monthly income
- In-service training/clinical based education
- Level of educational status
- Year of experience

Hospital related factor

- Guideline based heart failure management
- Lack of educational resource

Nurse related factor

- Nurses interest to participate in patient education
- Shortage of time

4.8 Operational Definitions

- **Heart failure**: is a complex clinical syndrome characterised by the reduced ability of the heart to pump and/or fill with blood (4).

- **Heart failure management** is managing or treating the condition of the disease, by pharmacologic or non-pharmacologic or surgical interventions depending on the cause (3). Operationally it's defined as a management which focused on non pharmacologic strategies of heart failure management which is providing health education for patient with heart failure.
- **Knowledge of heart failure management:** means the nurses' level of understanding towards heart failure management.

  Good Knowledge: is the Knowledge Status of nurses when they scored more than and equal to 85 % based on the 20 items nurses knowledge towards heart failure self management education survey (30).

  Poor knowledge: is the Knowledge Status of nurses when they scored less than 85 % based on the 20 items nurses knowledge towards heart failure self management education survey (30).
- **Attitude towards heart failure management**: refer to the nurses' feeling and approach towards management of patient with heart failure.

  Positive attitude: is the category of nurses when they scored more than the mean value.

  Negative attitude: is the category of nurses when they scored less than the mean value.

4.9 Data collection tool and Procedure

Self-administered structured questionnaire was used to collect the data from study participants. It consists of three sections. The first section is for nurse's socio demographic characteristics. The second section was intended to assess nurse's knowledge regarding the management of heart failure, the tool was adapted from The Nurses' Knowledge of Heart Failure education principle questionnaire, designed by Albert and colleagues (2002), is a 20- item true/false survey on HF management principles. Validity and reliability of the instrument had been previously established by Albert and colleagues (2002) using a panel of experts in HF and patient educators, resulting in 100% test-retest reliability. The overall true score for the construct, nurses' knowledge of HF education principles, was expected to be 85% or greater according to instrument developer (30).

The third section of the questionnaire included 18 statements exploring the nurse's attitude towards management of a patient with heart failure adapted from previous literature the tool was rigorously revised by a panel of experts in medical and nursing cardiology for face and content validity, and necessary modifications were done. The reliability of the attitude scale was tested in a pilot study conducted on 20 nurses through assessing its internal consistency. It showed good level of reliability with Cronbach Alpha Coefficients 0.798. The tool was then finalized based on the pilot results. The responses based on a 5-point Likert scale from "strongly agree" to "strongly disagree." These were scored from 5 to 1 respectively, and the scoring was reversed for negative statements so that higher scores indicate more positive attitude. The scores of the items were summed-up and averaged by dividing by the number of items.

It is prepared in English and data collectors were recruited from staff nurses in each selected hospitals. The principal investigator was take the responsibility of coordinating the nurses and discussed about the purpose of the study. Then based on their willingness to participate, questionnaire was distributed and orientation was given on how to fill the questionnaire and clarification for any difficulties.

4.10 Data quality control

Quality of data was controlled by applying pre-test in 5 % of the sample nurses in Tikur Anbessa Specialized Hospital, two weeks before data collection time. One full day training was given for data collectors regarding the study, the questionnaire and data collection procedure by the principal investigator. The Collected data was checked every day for its completeness and faced Problems were discussed with data collectors overnight. Confidentiality was insured by disclosing the names or any personal identity. Uncompleted questionnaires would be omitted before data entry.

4.11 Data analysis procedure

Data was verified, coded and entered to Epi Info Software version 3.4.5 and then it was exported and analyzed by SPSS version 24 Software. It was processed by carrying out simple descriptive statistics (mean and standard deviation) and used for quantitative variables and frequency with percentage distribution for categorized variables. Binary and multivariable Logistic regressions were computed to evaluate the association.

4.12 Ethical clearance

Ethical clearance was obtained from institutional review board of Addis Ababa University, college of health sciences, department of nursing and midwifery research committee. Official letter was submitted to Tikur Anbessa specialized hospital, Saint Peters specialized hospital and Saint Paul Hospital Millennium Medical College (SPHMMC) after permission obtained from those bodies, all participants were recruited prior to data collection.

4.13 Dissemination of findings

The primary objective of this dissertation is for fulfilment of the requirements to degree of masters in Adult Health Nursing; the result will be submitted to the School of Nursing and Midwifery, College of Health Sciences, Addis Ababa University, Ministry of Health, Tikur Anbessa Specialized Hospital, Saint Peter Specialized Hospital, Saint Paul Hospital Millennium Medical College (SPHMMC) and concerned bodies such as service providers, policy makers and other stake holders. Publication in peer reviewed national and international reputable journals will be attempted.

CHAPTER FIVE RESULTS

5.1. Socio-demographic characteristics of study participants

The study sample consisted of 180 nurses with 5% non response rate and 95% of response rate. As demonstrated in table 2 among the study participants 58.3% and 41.7% are females and males respectively, whose age ranged between 25 and 51 years with mean of 31 years and SD 5.6. Majority of the study participants are married with 58.3% and 73.3% of the study participants were holding a bachelor degree in nursing with experience years ranging between 1 to 17 years (median 5 years) and majority of the study participants 72.8% had no previous training regarding about heart failure management.

Table 2 Socio- demographic characteristics of study participants at selected government hospitals in Addis Ababa, Ethiopia, 2020 (n= 180)

Socio - demographic variable	Group	Frequency	Percent (%)
Age	25-30	115	63.9
	31 – 36	19	10.6
	37 – 42	33	18.3
	> 42	13	7.2
Gender	Male	75	41.7
	Female	105	58.3
Marital status	Single	72	40.4
	Married	105	58.3
	Other	3	1.7
Level of education	Diploma	14	7.8
	Degree(BSc.)	132	73.3
	Masters(MSc.)	34	18.9
Year of experience	1 – 3	81	45
	4 – 6	53	29.4
	7 – 9	14	7.8
	10 and above	32	17.8
Monthly income	2600-4600	40	22.2
	4700-6700	73	40.6
	6800-8800	36	20
	8900-10,900	16	8.9
	>11000	15	8.3
Had training towards heart failure management	Yes	49	27.2
	No	131	72.8

5.2 Nurses knowledge towards heart failure management

As table 3 indicated that questions correctly answered by participants are questions: related to fluid 70.6%, related to diet 80.6%, related to salt restriction 64.4%, related to symptom (cough, nausea) 76.1%, related to weight 71.7%, related to sign (swelling of abdomen) 81.7%, related to ideal weight $v_{s.}$ daily weight 53.9% and related to diuretic medication 79.4%. Questions which have low correct response are questions related to exercise 18.3% and related to medication, Non Steroidal Anti Inflammatory Drugs (NSAIDs) 41.7%.

Out of 20 questions 4 questions are assessed the nurses knowledge regarding about sign and symptoms which should be notify for the physician, related to this 2 questions have low correct response low BP without symptom (43.3%) and dizziness (40%) the rest 2 questions related to new onset of fatigue and leg weakness have high correct response 85% and 85.6% respectively.

The mean score for all study participants was 13.95 ± 3.541. The range of correct answers was 7 to 20 out of 20 questions. The percentage of correct responses to individual questions ranged from 18.3 to 85.6%. Participants had scores greater than 80% on 4 questions. On 12 questions, individual scores ranged 50 % to 80%, and on 4 questions individual scores were less than 50%.

Table 3 knowledge towards heart failure management among nurses working in cardiac unit of selected government hospitals, Addis Ababa, Ethiopia, 2020 (n=180)

No.	Items	Answer	Yes.		No	
			F	**%**	**F**	%
1	patients with HF should drink plenty of fluids each day	N	53	29.4	127	70.6
2	processed lean meats are an acceptable food choices as part of the patient's diet	N	69	38.3	111	61.7
3	as long as no salt is added to foods there are no dietary restriction for patient with HF	N	64	35.6	116	64.4
4	Coughing and nausea/poor appetite	Y	137	76.1	43	23.9

	are common symptoms of advanced HF					
5	patient with HF should decrease activity and most forms of active exercise should be avoided	N	147	81.7	33	18.3
6	In case of weight gain of more than one KG during one day, this means heart failure become more worse	Y	129	71.7	51	28.3
7	Swelling of the abdomen may indicate retention of excess fluid due to worsening of HF	Y	147	81.7	33	18.3
8	If patients take their medication as directed and follow the suggested lifestyle modifications, their HF condition will not return	N	76	42.2	104	57.8
9	when a patient have aches and pain, asprin and non-steroidal anti inflammatory drugs (ibuprofen) should be recommended	N	105	58.3	75	41.7
10	If a patient adds extra pillows at night to relieve shortness of breath, this does not mean that their HF condition has worsened	N	65	36.7	115	63.3
11	If a patient wakes up at night with difficulty breathing, and the breathing difficulty is relieved by getting out of bed and moving around, this does not mean that the HF condition has worsened	N	61	33.9	119	66.1
12	once the patient's HF symptoms are gone, there is no need for obtaining daily weight	N	70	38.9	110	61.1
13	when assessing weight results, today's weight should be compared with the patients weight from yesterday, not the patients ideal or 'dry' weight	N	83	46.1	97	53.9
14	Once heart failure signs disappear, daily weighing is no longer required	N	68	37.8	112	62.2
15	Eating large amount of fruits and vegetables, whole grains and low-fat dairy products is advised for patient with heart failure	Y	145	80.6	35	19.4

16	Patient with HF are advised to take the diuretic medication at morning	Y	143	79.4	37	20.6
17	BP recording of 80/56 without any HF Symptom should report	N	102	56.2	78	43.3
18	Dizziness or light headedness when arising that disappears with in 5 min. should report	N	108	60	72	40
19	New onset or worsening of fatigue should report	Y	153	85	27	15
20	New onset of worsening of leg weakness or decreased ability to exercise	Y	154	85.6	26	14.4

As figure 2 showed that out of 180 study participants 125(69.44%) of the study participants have poor knowledge and 55 (30.56%) of participants have good knowledge. In this study nurses who are grouped under good knowledge are those who score 17 and more out of 20 questions and who are grouped under poor knowledge are those who score less than 17 out of 20 questions this classification is based on Albert et.al, 2002.

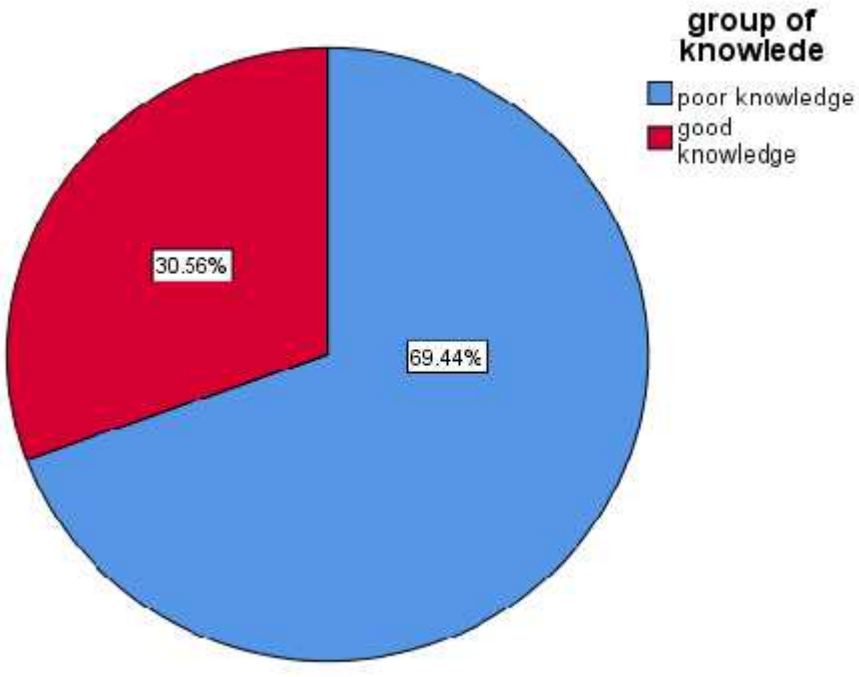

Figure 2 Knowledge towards heart failure management among nurses working in cardiac unit of selected government hospitals, Addis Ababa, Ethiopia, 2020 (n= 180).

Among the 180 participants 84.3% of participant with poor knowledge are age group between 25-30 and 69.7 % of participants with good knowledge are age group between 37-42. 71.9 % of the participants with good knowledge are those whose year of experience 10 and above and 88.9 % of the participant with poor knowledge are those whose year of experience between 1- 3. 69.4% of participants who had take training had good knowledge and 84 % of participant who didn't take training had poor knowledge. 67.6% of participant with good knowledge are nurses who have masters degree and 23.5% of participant with good knowledge are nurses who have Bachelor of Science.

5.3 Attitude towards heart failure management

Attitude of nurses were asked to score 18 questions on a five - point Likert scale related to heart failure management. Respondents who scored more than the mean value were regarded as having positive attitude towards heart failure management. Nurses who scored less than the mean value were regarded as having negative attitude towards heart failure management. Among the 180 respondents 170 (94.4%) had positive attitude towards heart failure management (M = 3.72, SD= 0.39).

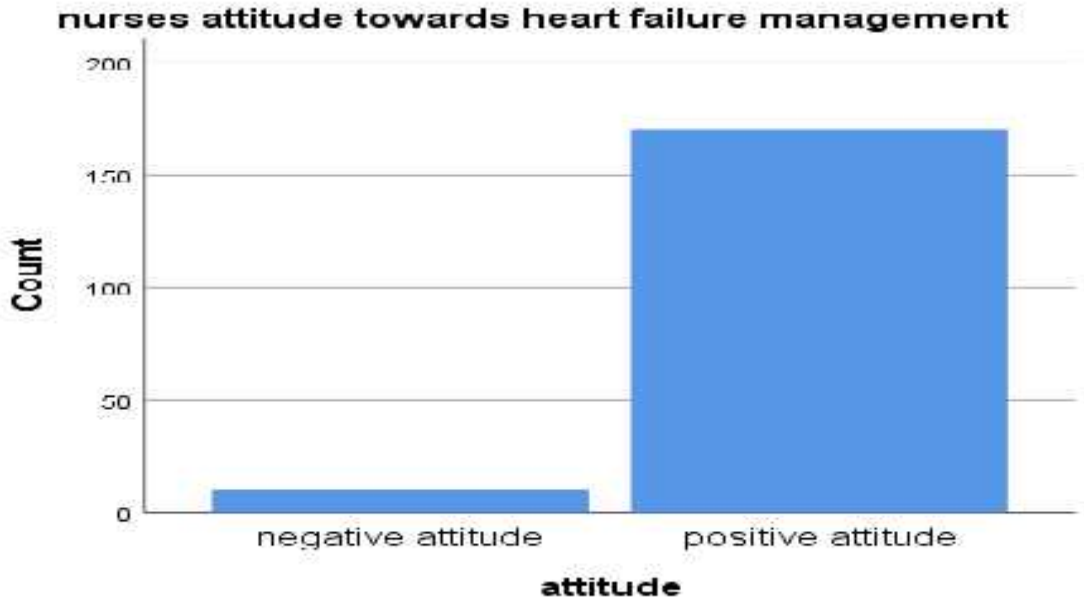

Figure 3 Attitude towards heart failure management among nurses working in cardiac unit of selected government hospitals, Addis Ababa, Ethiopia, 2020 (n=180)

5.4 Factors associated with nurse's knowledge and attitude towards heart failure management

In binary logistic regression analysis age, level of education, year of experience and training were found a significant association with nurse's knowledge towards heart failure management. As shown in the table 4 that the association among different age groups and knowledge towards heart failure management, the odds of knowledge towards heart failure management was increased by 12.4 times for nurses whose age group between 37- 42 and 12.13 times for nurses whose age group between above 42. This is significantly associated (COR: 12.4; 95% CI (5.06-30.38)) and (COR: 12.12; 95% CI (3.37-43.6)). So this result showed that as age increased the probability of having good knowledge towards heart failure management also increase. With regard to year of experience the odds of knowledge towards heart failure management was increased by 2.87 folds for nurses who have 4 - 6 year of experiences and increased by 14.4 times for nurses who have 7-9 year of experience (COR: 2.87, 95% CI (1.14- 7.23)) and (COR: 14.4, 95% CI (3.94- 52.53)). Nurses who have taken training on heart failure management had 11.87 folds higher good knowledge compared to those who didn't take training (COR: 11.87, 95% CI (5.51-25.54)).

In the multiple logistic regressions analysis only taking training on heart failure management remained significantly associated with knowledge towards heart failure management. However, age, level of education and year of experience did not associate with nurse's knowledge towards heart failure management. With regard to training the odds of knowledge towards heart failure management was 0.062 folds higher for those participants who had take training (AOR: 0.062, 95% CI (0.004- 1.021)).

As the present study found that attitude towards heart failure management doesn't have any significant association with the variable nurse and hospital related factors. Based on the present study 100% of participants didn't have heart failure management guideline in their organization. 62.2% of the participants didn't have any educational resource to educate patient with heart failure about heart failure management and 61.1% of the study participant didn't feel lack of interest to participate in patient education.

Table 4 knowledge towards heart failure management and associated factors among nurses working in cardiac unit of selected government hospitals, Addis Ababa, Ethiopia, 2020 (n=180)

Knowledge							
Variables	**Category**	**Good (%)**	**Poor (%)**	**P Value**	**COR**	**P Value**	**AOR**
Age	25 – 30	15.7	84.3%	**0.00**	**1**		1
	31 – 36	26.3%	73.7%	0.260	1.925(0.617,6.007)	0.762	0.69(0.62,7.62)
	37 – 42	69.7%	30.3%	**0.00****	12.4(5.05, 30.38)	0.834	0.772(0.69,8.6)
	> 42	69.2%	30.8%	**0.00****	12.12(3.37, 43.64)		
Level of education	Diploma	7.1%	92.9%	**0.00**	**1**		**1**
	Degree	23.5%	76.5%	**0.003****	0.037(0.004,0.318)	0.488	0.419(0.036,4.9
	Masters	67.6%	32.4%	**0.00**	0.147(0.64, 0.334)	0.706	0.79(0.23,2.67)
Year of experience	1 – 3	11.1%	88.9%	**0.00**	**1**		**1**
	4 – 6	26.4%	73.6%	**0.025****	2.872(1.140, 7.232)	0.419	0.342(0.025,4.611)
	7 – 9	64.3%	35.7%	**0.00****	14.4 (3.947, 52.53)	0.825	0.763(0.69,8.45)
	10 and above	71.9%	28.1%	0.608	20.4(7.25,57.63)		
Training	Yes	69.4%	30.6%	**0.00****	11.87(5.51,25.54)	**0.05***	0.062(0.004, 1.021)
	No	16%	84%	**0.00****	**1**		1

*p value is significant at 0.05, **p value significant at 0.01

CHAPTER SIX DISCUSSION

The present study showed that poor knowledge of coronary failure management among nurses working in the study settings. From the entire number of 180 participants, 125 (69.44%) had poor knowledge about coronary failure management. The percentage of correct responses to individual questions ranged from 18.3 to 85.6%. Similarly, a study in the United States reported low levels of nurses' knowledge towards coronary failure management, with correct answers ranging between 14 and 100% (21). The present study also report that questions focused on notification of the physician regarding blood pressure, dizziness are frequently missed questions. This finding is analogous with the study conducted in United State (21).

The present study finding demonstrates that percentage of correct responses to individual questions ranged from 18.3 to 85.6%. Participants had scores greater than 80% on 4 questions. On 12 questions, individual scores ranged 50% to 80%, and on 4 questions individual scores were less than 50%. This finding is low in comparison to the study wiped out small mid- western community, most respondents 90% answered 6 questions correctly, 70% to 90% answered 9 questions correctly, less than 70% answered 5 questions correctly based on this finding study conclude that nurses had poor knowledge towards heart failure management(22).

In the present study, low level of correct response was observed in associate with exercise only 18.3 % of participants knew the right answer, in associated with medication 41.7% knew the right answer, in associated with non symptomatic low blood pressure 43% are correctly response and 40% of participant correctly response for managing transitory dizziness. High level of correct response was observed in the diet 80.6%, in fluids 70.6%, cough, nausea/poor appetite it was 76.1% and dry weight V_S ideal weight 53.9%. This finding may be a little bit similar with the study conducted in Barcelona which is for non symptomatic low blood pressure (40.7%) as low level of correct response and diet; it had been 87.1%, in fluids 74.7% as high level of correct response. However, regarding the medication 95% and exercise 91.4% was high level of correct response than this study. On the opposite, regarding cough, nausea/loss of appetite and dry weight response rate was above the study conducted in Barcelona.

Even if the individual results of the study participants are comparable with the study conducted in Barcelona, when the result summarized the level of nurses knowledge

towards heart failure management was good with the average score was (M=15.6 ,SD=2.2). This difference might be due to the presence of specific training in HF. However, in the present study only 27.2% of the study participants receive training (24).

The result of this study indicated that the study sample had poor knowledge towards heart failure management. Similarly a study conducted in Al-Najaf City, in their study "assessment of nurse's knowledge towards management of patient with coronary failure" concludes that the bulk of nurses had poor knowledge regarding management of heart failure (26). Also a study conducted in polish nurses, to assess nurses' knowledge of HF self-care principles, stated that Mean (SD) HF self-care maintenance knowledge score was 12.1 and the study mentioned that nurses had poor knowledge (23).

The present study also demonstrated that nurses' attitudes towards management of patients with coronary failure tended to be positive. The median total score was 3.72, thus approaching the "agree" score. This finding is analogous with the study conducted in Bahrain hospital by H. Mohammed (4).

Concerning factors related to nurse's knowledge towards coronary failure management; this study found that there have been a big association between nurse's knowledge and their demographic data in associated with age, level of education, year of experience and training. However, there's no association with gender, marital status and monthly income. This finding similar with the study conducted at Al-Najaf City.

In regarding to age there's a big association with nurse's knowledge towards coronary failure management and because the present study found that when the age increases the knowledge towards coronary failure management also increase. These finding similar with the study conducted at Al-Najaf City and it stated that age is significantly associated with nurse's knowledge at p value (0.013).

The finding of the present study mentioned that regarding year of experience, significant association between year of experience and nurse's knowledge, study conclude that nurses have less score 11.1% during the primary 3 year of experience and therefore the nurse with 4 - 6 years of experience had 26.4% and nurses with 7-9 year of experience had 64.3%. This finding was supported by the study conducted in Al-Najaf City.

There were significant association between nurse's knowledge and taking training towards heart failure management. This finding similar with the study conducted in Barcelona.

The present study found that there was no coronary failure management guideline for nurses in their organization this factor may lower nurses knowledge towards heart failure management because consistent with George A. Heckman et.al., study guideline based heart failure management can improve nurse's knowledge (29).

The present study found that nurses have positive attitude towards coronary failure management. Since the study stated 61.1 % of the participants didn't feel lack of interest to participate in patient education. The study wiped out Iran stated that lacks of interest to participate in patient education and having shortage of time to participate in patient education are the foremost important barrier which affects the attitude of nurses (28).

CHAPTER SEVEN STRENGETH AND LIMITATION

Strength of the study

- Standard and valid questionnaire utilized in other studies was adopted and adapted for this study.
- Pre-test was done before actual administration of the prepared tool at actual subjects.

Limitation of the study

- Though the study area mentioned selected hospitals of Addis Ababa the result may not represent knowledge and attitude regarding coronary failure management in Addis Ababa aside from the study area.

CHAPTER EIGHT CONCLUSION AND RECOMMENDATIONS

8.1 Conclusion

According to the result of present study, the nurses within the study setting have poor knowledge towards coronary failure management, where as their attitude was positive. As the study found that age, level of education, year of experience and training were significant association with knowledge towards coronary failure management. Knowledge deficit may have a negative impact on patient's outcome and on the quality of nurse's practice and health care delivery.

8.2 Recommendation

Based on the findings of the study the following recommendations are forwarded to concerned bodies, for ministry of health, policy makers, each hospital administration with collaboration to each other to formulate heart failure management guideline to be utilized by all nurses in the study settings to improve the nurse's knowledge, regarding coronary failure management for good outcomes and wellbeing of patients. For unit managers and matrons in collaboration with training and research center and director of nursing also recommended to encourage and organize continues professional development. The study also recommend that the hospitals administration to provide training for nurses regarding about coronary failure management.

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APPENDIX

Annex A Information sheet

My name is _____. I am working as a data collector in the research conducted by Betelhem Mesfin, who is conducting this research entitled "Nurses knowledge, attitude and associated factors toward heart failure management" for the partial fulfilment of her Master degree in Adult Health nursing specialty track in Addis Ababa University. For this study you are selected as a participant and before getting your consent or permission of your participation you need to know all necessary information related to the study. Thus, this, information will be detailed as

Objective: To assess Knowledge, Attitude and associated factors towards heart failure management among Nurses Working in cardiac unit at selected governmental hospital of Addis Ababa, Ethiopia, 2020

Name of advisors: Mr. Daniel Mengistu (MSc, PHD fellow) and Mr. Teshome Habte (BSc., MSc.)

Name of the organization: Addis Ababa University, College of Health Sciences, School of Nursing and Midwifery.

Participants: Nurses working in at selected governmental hospitals of Addis Ababa namely Tikur Anbessa specialized hospital, St. Paul specialized hospital, St. Peters specialized hospital.

Confidentiality: All information you give will keep confidential and will not be accessible to any third party. You are not asked to write your name on the questionnaire sheet so that you will not be identified.

Risks: The procedure does not bear any physical or psychological trauma on you. You will not force to respond to the information you do not know. However, by participating in this research project, you may feel that it is time consuming, wasting about 20 minutes. We hope you will participate in the study for the sake of the benefit of the research result

Benefits: For your participation in the study, no payment will grant. However, participating in the study and giving your information to questions asked will have great input in efforts to identify knowledge, attitude and associated factors toward heart failure management.

Right to refuse or withdraw: - Your participation is voluntary and you are not obligated to answer any question you do not wish to answer. If you feel discomfort with the question, it is your right to drop it any time you want.

If you have questions regarding this study or would like to be informed of the results after its completion, please feel free to contact the principal investigator and advisor.

Person to contact: If you have any question to ask, please contact

Name - Betelhem Mesfin

Phone No. - 0972340309

E-mail **- betemesafint@gmail.com**

Annex B Consent form

I have read all the process and the objective of the study. I am giving my consent to participate in the study entitled "Assessment of Knowledge, Attitude and associated factors Towards Heart Failure Management Among Nurses Working in Cardiac Unit at Selected Governmental Hospital of Addis Ababa, Ethiopia, 2020". I have been informed that the purpose of the study. I have understood that participation in this study is entirely voluntarily. I have told that my answers to the questions will not give to anyone else and no reports of this study ever identify me in any way. I have also informed that my participation or non-participation or my refusal to answer questions will have no effect on me. I understood that participation in this study does not involve risks.

_____ Yes, I want to participate in the study (Please go to the next page).

_____ No, I do not participate in the study (Thank you very much!).

Data facilitator

Name_____Signature_____Date____/_____/___

Result:

1. Questionnaire completed _____

2. Questionnaire partially completed _____

3. Participant refused _____

4. Others (please Specify) _____

Checked by Supervisor:

Name_____Signature_____Date____/____/__

Annex C Questionnaire

Name of your hospital _____

Name of your work unit _____

Part I Socio demographic characteristics of respondents

Instruction: Please put this symbol (*) on your choice for each question.

Serial No.	Demographic data	Groups	Response
101	Age (year)		
102	Gender	Male	
		Female	
103	Marital status	Single	
		Married	
		Widow	
		Divorce	
		Separated	
104	Monthly income		
105	Highest Level of education that you achieved.	Diploma	
		Degree (BSc.)	
		Masters (BSc.)	
106	Year of experience		
107	Have you take training regarding about heart failure management.	1. Yes 2. No	
108	If the answer is yes for question number 7, for how many times you take the training.		

Part II Knowledge of nurses towards management of heart failure

Instruction: encircle the answer you choose for each question.

No.	Question	Response
201	Patients with Heart Failure (HF) should drink plenty of fluids each day.	1. Yes 2. No
202	Processed lean meats are an acceptable food choice as part of the patient's diet.	1. Yes 2. No
203	As long as no salt is added to foods, there are no dietary restrictions for patients with HF.	1. Yes 2. No
204	Coughing and nausea/poor appetite are common symptoms of advanced HF.	1. Yes 2. No
205	Patients with HF should decrease activity and most forms of active exercise should be avoided.	1. Yes 2. No
206	In case of weight gain of more than one kilogram during one day, this mean heart failure become more worse.	1. Yes 2. No
207	Swelling of the abdomen may indicate retention of excess fluid due to worsening HF.	1. Yes 2. No
208	If patients take their medications as directed and follow the suggested lifestyle modifications, their HF condition will not return.	1. Yes 2. No
209	When patients have aches and pains, aspirin and non-steroidal anti-inflammatory drugs (NSAIDs like ibuprofen) should be recommended.	1. Yes 2. No
210	If a patient adds extra pillows at night to relieve shortness of breath, this does not mean that their HF condition has worsened.	1. Yes 2. No
211	If a patient wakes up at night with difficulty breathing, and the breathing difficulty is relieved by getting out of bed and moving around, this does not mean that the HF condition has worsened.	1. Yes 2. No
212	Once the patient’s HF symptoms are gone, there is no need for obtaining daily weights.	1. Yes 2. No
213	When assessing weight results, today’s weight should be	1. Yes

	compared with the patient's weight from yesterday, not the patient's ideal or "dry" weight.	2. No
214	Once heart failure signs disappear, daily (patient) weighing is no longer required	1. Yes 2. No
215	Eating large amounts of fruits and vegetables, whole grains and low-fat dairy products is advised for patient with heart failure	1. Yes 2. No
216	Patients with HF are advised to take the diuretic medication at morning	1. Yes 2. No

Statements in questions 17-20 reflect signs or symptoms that patients may have. Please indicate "yes" or "no" to signify whether a patient should notify their HF physician of these signs and symptoms.

217	BP recording of 80/56 without any HF symptoms	1. Yes 2. No
218	Dizziness or lightheadedness when arising that disappears within 5 minutes	1. Yes 2. No
219	New onset or worsening of fatigue.	1. Yes 2. No
220	New onset or worsening of leg weakness or decreased ability to exercise.	1. Yes 2. No

Part III Attitude of nurses towards management of heart failure

No.	Item	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
301	Do you feel that the nursing care for the client has a direct effect on patient's physical and mental health?					
302	Do you believe that preventing noise around the client plays an effective role in the progress of the heart condition?					
303	Do you feel that setting a nursing plan for the client can protect from noise and reduce sleep disturbances thus speeding up the recovery?					
304	Do you think that explaining the client's condition to his/her family may lead to speed up the client adaptation to his/her condition?					
305	Do you think that client's behaviour and the degree of adaptation depend on his/her social and educational level?					
306	Do you think that the client feels secure in the Cardiac Care Unit when the					

	medical team members are by his/her side all the time?					
307	Do you believe that health education is important to the client?					
308	Do you think that encouraging the client to speak about his/her fears is important to control it?					
309	Do you believe that train the cardiac nurse before and during duty to be able to raise their performance level is important?					
310	Do you believe that all staff in the Cardiac Care units should work as a team is important to raise the level of their performance?					
311	Do you think that explaining the nursing procedures to the client is boring and useless?					
312	Do you think that placing the client in the intensive care room has a negative effect on his/her mental health?					
313	Do you believe that the more the client is aware of the nature of their illness, the more difficult it will be					

	to deal with them?					
314	Do you think that any qualified nurse can work in Cardiac Care units?					
315	Do you feel bored when you listen to the client's complaints?					
316	Do you feel depressed as a result of dealing with the client with heart failure?					
317	Do think that a client who has no idea about his/her illness is easy to deal with?					
318	Do think discussing the client's condition in front of him/her may lead to increase his/her anxiety?					

Part IV Factors affecting nurses knowledge and attitude towards heart failure management.

Serial No.	Questions	Response
401	Do you have heart failure management guideline or standard tool in your working unit?	1. Yes 2. No
402	If the answer is yes, do you follow the guideline to provide education for patient with heart failure?	1. Yes 2. No
403	Have you ever feel lack of interest to participate in education of patient with heart failure?	1. Yes 2. No
404	Do you have educational resource to educate patient about heart failure management?	1. Yes 2. No
405	Do you have shortage of time or work load to provide education for heart failure patient.	1. Yes 2. No