DESCRIBE THE KNOWLEDGE AND ATTITUDE ON THE USE OF INTERNATIONAL GUIDELINES FOR MANAGEMENT OF PATIENTS WITH HEART FAILURE AMONG NURSES AT THE UGANDA HEART INSTITUTE, MULAGO HOSPITAL.

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A Centre of Excellence in the Heart of Africa

Declaration

I, Atifa Munanda hereby declare that this research titled "knowledge and attitude on the use of international guidelines for management of heart failure among nurses at the Uganda Heart Institute, Mulago Hospital" is my original work, and has not been submitted to any other institution for any award. I sincerely acknowledge all the authors of the literature that I used to put the research together. This research is submitted to the faculty of health sciences in partial fulfillment of masters of Science in nursing at Uganda Christian University, Mukono.

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Dedication

I dedicate this work to the almighty God, who has given me life and guidance to complete this work. I also dedicate this work to my friends for the love and support that strengthened and encouraged me throughout this study process. This work is further dedicated to my dear husband for the patience and support during time that I was away working to beat the deadlines. A special thanks to my sisters for their social and financial support. A special thanks and gratitude to my father who taught me that even the largest tasks can be accomplished if it is done one step at a time.

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List acronyms and abbreviations

HF	-	Heart Failure
AHA	-	American Heart Association

Abstract

Background and aim: Heart failure is a raising public health issue globally. In Uganda HF affects more than 15 % Ugandans annually, and results to increased hospital length of stay, frequent re-hospitalizations, increase hospital costs and premature deaths among those affected. The aim of study is to describe the knowledge and attitude on the use of international guidelines for managing HF among nurses at the Uganda Heart Institute.

Methods: The study employed descriptive cross-Sectional study design of quantitative approach of data collection. The research was conducted on 72 nurses who have worked for more than six months in Uganda heart institute. The questionnaire consisted of 30 questions that assessed knowledge and attitude of nurses on the use of international guidelines. The study questionnaire was conducted on the month of June 2023 to July 2023.

Results: A total of 72 nurses participated in this study. Average age was 36.7 years with minimum age 27 and maximum age 58 years. 67% of the respondents were below 40 years. Overall, 46.9% of the respondents had good knowledge about management of heart failure using international guidelines. Among the 72 respondents 48(66.7%) had positive attitude towards heart failure management (M = 3.8, SD= 3.3), male had nearly equal attitude compared to female (70.0% vs. 68.7%), participants who had an experience of more than 20 years had a better attitude compared to all categories of experience.

Discussions and conclusion: participants had a good knowledge compared to the results from other studies. The knowledge was associated with knowledge years of experience and some forms of specialization. The results showed good attitude which was similar to other studies. Increasing awareness on the use of international guidelines might further improve knowledge.

CHAPTER ONE

Introduction

Heart failure (HF) is a growing public health concern affecting 64.34 million people globally, additionally the current global economic burden of HF is projected at 346.17 billion US dollars, and the prevalence and health loss are frequently increasing. Heart failure also affects mostly the elderly and people living in low socio-demographic regions, (Lippi & Sanchis-gomar, 2020). Heart Failure is also responsible for the high rate of morbidity and mortality globally, (Ziaeian et al., 2017). To respond to the increasing burden of heart failure, the American heart association developed international guidelines to guide the medical and the nursing management of HF, (Grady et al., 2000). The Uganda heart institute has adopted these international guidelines to guide the management of heart failure.

In Uganda Heart Institute patients are received triaged and their particulars are entered into computer system and their vital signs taken. Patients are guided through the system to be attended by the doctors in outpatient, and in inpatient patients are frequently reviewed by doctors' daily and general nursing care is given. Doctors take history; assess patients, order for investigations such as laboratory tests. Electrocardiograms and other investigation are done by nurses and phlebotomists, radiologists and cardiologists. They review results of the investigations, prescribe medication and counsel patients as well as give patients return dates. Due to large patient numbers compared to the numbers of doctors and nurses, patients often complain about the inadequate time and information they receive. In this setting, the roles of nurses are not clearly spelt out in the management of patients with HF.

Nurses' role in HF management is not well defined. Ideally nurses have the role of collaborating with multidisciplinary team to engage patients in self-care management, where

patients are given the health information in simple terms to be able to understand the condition; benefits of life-style modifications; functions of their medicine; possible side effects; signs of worsening symptoms; importance of adherence to therapy, diet; physical activity and rest, (Grady et al., 2000). This research therefore seeks to describe knowledge and attitude on the use of international guidelines for managing of HF among nurses in Uganda Heart Institute. The results of this study will be used as baseline information in the interventions to improve the use of international guidelines in the management of patients with HF.

Background of the Study

Heart failure is a clinical syndrome where the heart is unable to receive adequate blood flow, and unable to provide adequate blood supply to organs and tissues, (Sharon Ann Hunt et al., 2009a). Heart failure has been known since ancient times, history of HF dates over 3500 years and the first case of HF remains was discovered in a plundered tomb in the valley of the queens by an Italian Egyptologist and is now housed in Egyptian museum. Since then HF has become more prevalent with the increasing aging population worldwide. It is predicted that HF will put more demand on healthcare systems with increased morbidity, mortality and healthcare cost,(Savarese et al., 2023).

Heart failure affects both the developed and developing world alike, In the United States of America, the prevalence of HF exceeds 5.8 million people and contributes to 2.4 million hospitalization, and a significant number of deaths, (Benjamin et al., 2019). Additionally, HF has been associated with increased health care costs and a high financial burden on health systems. Furthermore, the burden of HF in Europe is similar to that of other developed countries such as the United States due to the increased aging population and longevity of people. Heart failure in

this region is also associated with increased hospitalizations, healthcare costs, and a high rate of morbidity and mortality, (Lueder & Agewall, 2018).

Heart failure has also been reported in middle and low-income countries which are already struggling with limited resources and many infectious and non-communicable diseases, for example, a study done in South America showed that the continent had a high incidence and prevalence of HF with high mortality and re-hospitalization rates, (Benjamin et al., 2019). Another area is the Asian region which has the largest number of elderly people and has a high prevalence of HF similar to global values, with an increased rate of hospitalizations, high cost of health care and long hospital stay, (Reyes et al., 2016). This is expected to increase with the increase in the aging population, as a result HF is also an important health problem in this area.

In Africa HF has been documented, a study by (Bloomfield et al., 2013) found out that cases reports and case series about HF date back to the 20th century, and since then HF has had a significant effect in Sub-Saharan Africa. Furthermore it accounts for 9.4% to 42.5 % of all admission and 25% to 30% of all admissions to cardiac units, (Ogag, Adebiyi, Adewole & Silwa, 2019). The etiologies of HF in Africa are different from that of developed countries. The main causes of heart failure in this region include hypertensive heart disease, dilated cardiomyopathy, and rheumatic heart failure among others, compared to the developed countries where ischemic heart diseases are more common causes of HF.

In Africa, HF affects mainly the young people- and common among men than women- affecting mainly the productive age causing reduced productivity, compared to the developed countries where it is common among the elderly and affects both men and women alike, (Benjamin et al., 2019). Additionally, A study in Nigeria by (Ogah et al., 2014) shows that the mean age of patients with heart failure was 56.6 ±15.3 years, (57.3% ±13.4 for men and 55.7%

±17.1 years for women) most of the people affected are in the working-age, limiting their economic contribution while causing an increase in health care costs and out of pocket spending due to limited national insurance services in the region.

Information about HF in the different regions of Africa has been reported. A study done in Ghana by (Kofi Owusu, 2013) showed that HF was prevalent among patients that attended cardiac clinics by 76%. Age and common causes are the same as those already mentioned. Additionally, another study in South Africa by (Savarese et al., 2023) also found out that there is high prevalence of HF in this area and the age and causes are similar to that already mentioned.

In Uganda, however the prevalence and causes of HF are similar to the rest of Africa. A study done in Uganda on patients attending cardiac clinics found out that more than half of the patients had HF and was associated with frequent hospitalization, long hospital stays and mortality, (Uganda heart association conference, 2023). Hypertension is a growing threat as a cause of HF. A study done in Wakiso found out that the overall prevalence of hypertension was 15 % and pre-hypertensive were 45%. More than half of hypertensive patients do not know about their status and they are not on any medications, poorly managed hypertension is one of the leading causes of HF in Uganda, Heart Failure registry, (2023).

Heart failure symptoms severely damage patients' ability to carry out activities of daily living. In a study done by (Johansson et al., 2021) more patients reported poor health related quality of life that negatively affected their ability to perform activities of daily living. Patients with HF are frequently diagnosed with more than three other conditions and they take more than four medications a day, (Sharon Ann Hunt et al., 2009a). Increased number of symptoms, emotional, and economic burden coupled with frequent hospitalizations and poor health progression lead patients to face poor quality of life, (Wiśnicka et al., 2022).

Nurses play a pivotal role in the promoting positive patient outcome; patients with HF have unique needs that are slightly different from other patients, they need to be supported through education to be able to understand the illness and how to conduct self-care practice to live a healthy productive life as they go through the chronic illness, (Awoke et al., 2019). To improve nurses' knowledge in the management of HF, there is need for effective educational programs, (Awoke et al., 2019). Heart failure knowledge empowers nurses with right attitude to conduct a comprehensive education of patients and their care takers on one to one basis, which has been found to improve patient self-care practices, overall health and prevent readmissions, while also creating family awareness of HF and about what kind of support a patient with heart failure may need to live a healthy life and prevent complications (Wiśnicka et al., 2022).

It also prevents frequent re-admission of patients with HF through improved patient care. A study showed that a 30-day readmission rate decreased for patients with HF, following nurses education program, (Sterne et al., 2014). Nurses may not have enough knowledge about heart failure management to adequately prepare patients for self-care after discharge, nurses' knowledge about heart failure improves patient preparation for discharge and self-care management, which may prevent heart failure readmissions and improve patient outcome (Mahramus et al., 2014). Nurses strive to give the best available care to patients during their nursing care, however this goal can be affected by the level of knowledge and attitude they possess during nursing care, a study by (Demissie et al., 2021a) showed that the level of HF knowledge among nurses was very low whereas the level of attitude concerning HF management was adequate. Another study by (Sanad, 2017) also showed that nurses have limited knowledge of management of HF, additionally nurses attitudes regarding management HF patients was likely to be positive, if their knowledge levels improved.

In Uganda a number of studies have been conducted about knowledge and attitude of nurses on number topics. The study was conducted by (Kiwanuka & Masaba, 2018) about knowledge and attitude concerning pain assessment among cancer patients, the results showed that the nurses knowledge and attitudes where vital in the promotion of patients comfort. another study by (Yayi & Kizito, 2021) was conducted to assess the knowledge and attitude on use of complementary medicine among nurses and midwives. The results showed that the traditional and complementary medicine were being used because they are cheap and readily available, however there was need to improve traditional and complementary medicine use among nurses, midwives and other health workers. Additionally another study by (Nakate et al., 2015) on knowledge and attitude of nurses to regarding documentation of patient care. The results showed that most participants were positive about the importance of nursing notes, its vital role in legal protection and as nursing priority. However, there were no substantial alteration in attitude concerning documentation.

Knowledge is an important component in nursing, it is the basis that informs nursing practice and decision making. However, knowledge alone without attitude does not produce required patient's outcome as seen above. There is need to derive modes on how to cultivate positive attitude among nurses if nursing care is to be improved. A number of studies have been conducted about nurses' knowledge and attitude on a number of topics in Uganda as seen above, however there is limited literature about nurses' knowledge and attitude towards the management of HF. Therefore, this study seeks to describe knowledge and attitude on the use of international guidelines for managing HF among nurses at the Uganda Heart Institute.

Problem Statement

Heart failure is a raising public health issue globally, (Lippi & Sanchis-gomar, 2020). In Uganda HF affects more than 15 % Ugandans annually, and results to increased hospital length of stay, frequent re-hospitalizations, increase hospital costs and premature deaths among those affected, (U.H.I registry, 2023). Globally there are international guidelines used to guide the management of heart failure, for instance the American Heart Association (AHA) guidelines, these guidelines have been widely accepted and used in the medical and nursing management of patients with HF, (Grady et al., 2000). The Uganda Heart Institute has adopted the AHA guidelines in the medical management of patients with heart failure; however, there is a critical component of nurses' involvement in the use of international guidelines in managing HF that is missing for the international guidelines to be fully adopted. Nurses spend long hours with the patient, and so they may be in a better position to be actively involved in the care patients with HF. If nurses are not actively involved in management of patients with HF the Gaps in care may continue to increase, and if this situation persist it lead to frustration and loss of confidence of HF patients on the healthcare system. Therefore, this study seeks to describe the knowledge and attitude on the use of international guidelines for managing HF among nurses at the Uganda Heart Institute.

Study Purpose

The purpose of this study is to describe knowledge and attitude on the use of international guidelines for managing HF among nurses at the Uganda Heart Institute.

Research Question

What is the knowledge and attitude on the use of international guidelines for managing HF among nurses at the Uganda Heart Institute?

Study objectives

To assess nurses' knowledge on the use of international guidelines for managing HF at Uganda heart institute.

To describe the nurses' attitude towards the use of the international guidelines for managing HF at Uganda Heart Institute.

Significance of the study

The findings of this study may be significant to the nurses in several ways: first empower nurses to be involved in planning nursing care for HF patients and other patients with other conditions, secondly nurses might be motived to develop patient education tools for the care of patients with other conditions after realizing the positive results from this study and thirdly it might improve the image of nursing after provision of holistic care.

The findings of this study might inform curriculum developers to include patient education modules as key components in the nursing syllabus to promote holistic care. Additionally, the findings of this research might emphasize patient education as a core at all levels of nurse training courses and institutions to promote student's competency in the delivery of nursing care, and as well as empower health care facilities to develop an in-service training program to equip nurses with knowledge and skills to carry out patient education programs for patients with different conditions.

Inform policy makers to invest in special training for instance fellowship programs for nurses in different specialties to improve their knowledge and attitude towards nursing management of different conditions so that patients are taught and empowered with knowledge and skills to perform self-care practices. Recognize and sponsor outreach programs that promote patient education in communities. Adopt and translate guidelines for the care of HF patients and

roll out to benefit patients with other conditions. Inform health service commission to set job descriptions for nurse-patient educators and for nurses with specialized education.

In evidence-based practice nurses will be empowered to improve nursing standards using the best available evidence; and increase their knowledge on how to use available evidence to improve practice, promote the development of other patient-centered models of care, and enhance nurses' knowledge of HF. Enable institutions to adopt a full EBP for heart failure, to address challenges related to the preparation of HF patients for discharge for example importance of adequate nurse coverage in promoting patient discharge education, and the availability of discharge educational materials for successful patient education.

Theoretical Framework

The theory of reasoned action and planned behavior by Ajzen, 1991 as cited in (Madden et al., 1992) will be used to inform this research study.

Attitude towards behaviours.

Attitude towards behaviors indicates whether an individual has a positive or negative view towards behavior under investigation. Attitude is comprised of beliefs, knowledge, and value. One purposes as to whether the outcome of the behaviors are positive or negative, however attitude has been found to moderately predict behavior, (Ajzen & Madden, 1986).

Subjective norms.

Subjective norm is the perceived social pressure to perform a behavior. It involves an individual assurance as to whether significant other would approve or disapprove a behavior as well as an individual's motivation to conform with significant others expectations. Although subjective norm may be persuasive in a number of behaviors, subjective norm has been found to

generally be a poor predictor of behavioral control probably due to the lack of sufficient measurements, (Ajzen & madden, 1986).

Perceived behavioural control.

Perceived behavioral control signifies the amount of control an individual has over performing of a behavior under investigation. It is considered to be a moderate predictor of behavior, although some behaviors are out of control of the individual and so the aspect of actual behavioral control is included in the model, (Ajzen & Madden, 1986).

Actial behavioral control (intention).

Actual behavioral control directly affects behavior and is normally conisdered to apply influence between behavioral intentions and behavior within the TPB. The more favorable these three factors, i.e attitude towards behavior, subjective norms, and perceived behavioral control,

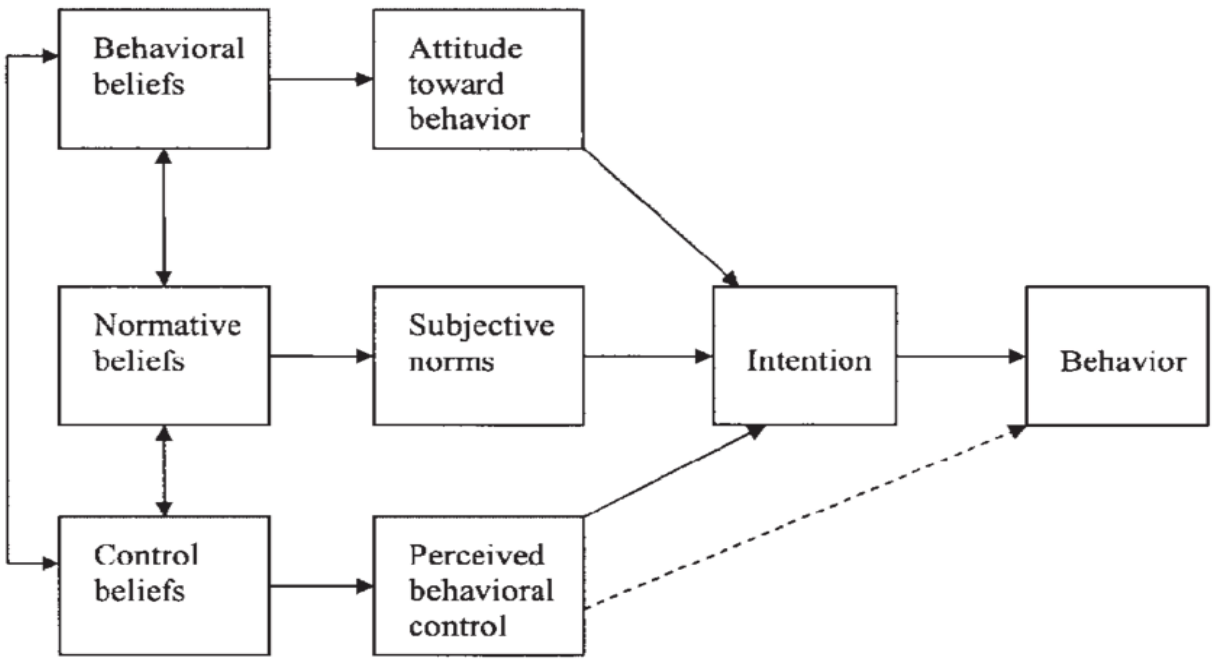

Figure 1.0. Theory of reasoned action and planned behavior

the more likely the intentions and actions are to occur that directly lead to behavioral change , (Ajzen & Madden, 1986).

Retrieved from: https://www.researchgate.net/figure/Schematic-representation-of-the-Theory-of-Planned-Behavior_fig1_247497748/download.

Application of the theory in the study.

Application of the theory to describe the knowledge and attitude on the use of the international guidelines for managing heart failure among nurses at Uganda Heart Institute. The model describes attitude and its effect on behavioral change and therefore knowledge is an external factor in this model. Attitude towards behavior depends on the balance between subjective norms and perceived behavoural control. These three combine to influence behavioral change by increasing the actual behavioral change (intention), which is a more dependable factor in the change of behavior from negative to positiveis. For example when the nurses have favorable attitude towards the use of the international guidelines for managing heart failure and perceives that using it improves patient care and has seen others use it with good results. When is given the knowledge and the tool one is more likely to participate in the management of patients with heart failure. However if the nurses do not have access to the international guidelines due to luck of adoption of the the international guidelines then the nurse has an actual behavioral control on the use of the international guidelines; i.e, the intention for use is there however, the tool is not available.

The model informs the study.

Nurses' attitude towards patient care has raised concern in many settings, knowledge is acquired through education and experience, however attitude is intrinsic and sometimes it is an individual decides on ones' attitude. Knowledge on how to use the international guidelines for managing heart failure and availability of the guidelines may trigger an individual to change their attitude. In this study attitude there are a number of questions that have been developed from

literature to aid in identification of factors that may lead poor attitude. These factors might later be manipulated to increase the attitude of nurses towards the nurse of international guidelines for managing heart failure and also conduct further inquiry on how to increase behavior change.

A number of studies have been done, where the theory of reasoned action and planned behavior was used to successfully plan and evaluate a number of interventions for several behaviors. A study by (Knowlden, 2015) found out that the change in diet among the students come about as a result of a number of interventions that were used, such as change due to treatment, and use of reminders such as emails, social media, posts informations on schools websites, oudio messages and health related websites among others. This means that interventions aimed at changing dietary behaviors among adolescents should include a multi-level theory based approach and resources.

Another study by (Lau et al., 2018) was done to assess breast feeding duration by lactating mothers, the results showed that maternal intentions and breast feeding self-efficcay were vital predictors of breast feeding duration. The knowledge of breast milk as the best food for babies, below six months, and the maternity period which gives the mothers time to spend with their babies and the support from the significant others in the home environement all influenced the breatfeeding duration. The theory of reasoned action and planned behavior was also used in a study to assess health seeking behaviors of women with fistula and their intention to participate in the care was done by (Nasiru & Abubakar, 2019) the results showed that the most improtant motivators in cure was attitude, expectatntios from significant others and self-efficacy to be involed in the cure programe.

When the same theory was used to study condom use among university students (Albarracín & Johnson, 2001), the results showed that the theory did not contribute to a large

extent in the use of condoms, however the power of assocaition was affected by reflections of the past behaviors. The theory of reasoned action and planned bahavior is useful in the study of behavior changes in a broad setting and has been widely used with dependable results, however it does does not independly lead to change in behavior in some study settings. It is important to think of multiple theories to ably predict change of behaviors in some study populations.

Operational Definitions

Self-care management is the knowledge and skills given to a group of patients/clients to improve their self-care management.

Patients with heart failure are a group of people with severe deterioration of heart muscle function.

Summary

Chapter one has covered the introduction to the research which includes why HF continues to be a global burden. In the background, the chapter has covered the definition of heart failure, historical, regional, and contextual issues about HF. The strategies and recommendations, research questions, and objectives, the theoretical framework and the examples of studies that have been done and the theory of reasoned action and planned behavior was utilized. Chapters two and three will cover literature review and research methods respectively.

CHAPTER TWO

Review of Literature

This chapter will cover all the relevant literature to describe the knowledge and attitude on the use of international guidelines for the management of HF among nurses at the Uganda heart institute. Dependent variables: the use of international guideline for the management of heart failure.

The use of International Guidelines for the Managing HF

Guidelines are scientific evidences that have been adopted and converted into clinical practice guidelines with the aim of improving health of a given population, for example guidelines developed for cardiovascular management, (Yancy et al., 2017). Guidelines for instance the international guidelines for the management of HF are developed through selection of a team, both academic and practitioners who come together to conduct a literature search for the randomized controlled trials and meta-analysis of all the published studies about the management. The information from the evidence are summarized into a document in form of class (class, I, II, IIa, IIb). Class I means the treatment is useful and effective; class II denotes a conflicting evidence of the procedure; class IIa shows that the weight of evidence is supporting a given procedure and class IIb shows that the procedure/treatment is not useful or may be harmful in some cases, (Sharon A. Hunt et al., 2002).

The levels of evidence from which the recommendations are established are ranked in the evidence hierarchy. level A if the findings are a result of multicenter randomized controlled trails, level B if findings were derived from a single randomized trials, or randomized studies and level C when the results come from a consensus opinions of experts, (Yancy et al., 2013); (Sharon A. Hunt et al., 2002). However, the strength of the evidence does not eventually reflect

the power of the recommendation. Alternatively, strong recommendations may be based on years of clinical experience and may be only supported by historical data or no data at all.

According to Sharon A. Hunt et al., (2002), the practice guidelines are intended to assist clinicians with clinical decision making by availing a range of generally acceptable approaches for the prevention, diagnosis and management of HF. guidelines try to define practices to meet the needs of most patients, however the overall judgment regarding the care of a particular patient must be made by the clinician through history and examination of the patient. The strategies described in the clinical guideline of HF act as checklist to be considered while trying to individual care, given the fact that every patient is unique and recommendations in the guidelines are outlines for evidence-based decisions for individual care, (Sharon A. Hunt et al., 2002).

The requirements for the use of international guidelines for the management of HF require clinicians to train at higher level to be able to use them comfortably. To prepare the clinicians to perform their roles adequately, there is a fellowship program for both doctors and nurses that has been started in Uganda Heart Institute to prepare clinicians to perform these roles at an advanced level. The program is three-years for doctors and two years for nurses, however due to limited resources only few nurses and doctors are enrolled at a given period. The training is not only on HF it encompasses the management of the different cardiovascular conditions. (Uganda Heart institute fellowship program)

International Guidelines on Self-care Management in HF

Self-care is a practice of preserving health through health promotion and prevention practices, Self-care management is about responding to signs and symptoms whenever they occur, (Jaarsma et al., 2021). Self-care in heart failure covers a number of topics which include

nutrition, physical activity, medication adherence, psychological status, sleep leisure and travel, smoking, immunization and preventing infections, symptom monitoring and symptom management. A meta-analysis study done by Aghajanloo et al., (2021), showed that self-care management was inadequate among patients with HF, additionally, patients need to be assisted to understand all these components of self-care management to be able to cope with chronic disease and improve their self-care behavior. Increased self-care behavior has been found to promote an improved quality of life and decreased readmission rates and mortality, compared with those with low levels of self-care, (Jaarsma et al., 2021).

Diet is an important component of self-care management in HF. Heart failure patients with advanced HF are at risk of severe wasting (cachexia) due to nausea and poor appetite and adequate dietary management is important to prevent its occurrence. Fluid restriction is essential in patients with advanced HF, additionally Fluid restriction of 1.5 to 2liters is has been recommended for patients especially with low sodium levels although it may not improve sodium levels. Salt intake of <5g is per day has been found to be beneficial to patients with HF, just as the general population, however some findings about salt restrictions were inconclusive,(Jaarsma et al., 2021); (Burgermaster, M., Redel.R., & Seres, 2020). Alcohol consumption has been a controversial topic in HF. The study by (Jaarsma et al., 2021) found out that there is a relationship between alcohol and supraventricular arrhythmias which may accelerate or exacerbate HF signs and symptoms and that abstinence from alcohol may reduce the symptom burden. Consumption of more than two units for men and one unit for women has been related to the development of HF and it has been recommended that this amount of alcohol intake should not be exceeded, however in alcohol related HF, complete abstinence is recommended which brings about a significant clinical improvement, (Jaarsma et al., 2021).

Exercise is another important component. Heart failure patients who engage in exercise that is in line with the class of HF were found to improve their functional statues, (Deis et al., 2022). There are a number of exercises that are beneficial to HF patients, however exercise should be carefully selected according to the patient's condition. These exercise range from passive to active, before the onset of disease exercise offers a protective benefit in the prevention of HF; in the presence of HF exercise promotes functionality in HF; and exercise is used to predict the prognosis in HF and disease progression, (Cattadori et al., 2018) Exercises have been found to improve the prognosis of HF, (Cattadori et al., 2018). However, not engaging patients in any exercise may lead to decreased functional status, (Jaarsma et al., 2021). There are a number of exercises that can be taught to patients and their care takers while in hospital that can be continued at home after disease to improve patient functional capacity and avoid preventable re-admissions. Exercise therapies have been found out to be safe and applicable as none pharmacological management for the treatment for exercise therapies in HF, (Zhang et al., 2020).

Psychological status is another important factor that affects adherence of self-care management, more than 70 % of patients with HF experience anxiety and depression, which worsens during hospitalization. Depressive symptoms and anxiety have been found to negatively affect self-care management and an important cause of increased health related expenditure, mortality and hospitalizations, (Jaarsma et al., 2021). Depressions is associated with high risky behavior, poor adherence to self-care management and an important cause of social issues. Adherence to self-care was found to be substantially high in HF patients who were non-depressed, (Navidian et al., 2015). Nurses are at the forefront in patient care, through continuous care and assessment HF patients, depression can be identified and managed appropriately to reduce on the occurrence of mental distress that comes with HF, (Andrietta et al., 2011).

Heart failure patients frequently experience altered sleep pattern due to episodes of pulmonary fluid overload causing difficulty in breathing while lying down, excess urination at night and shortness of breath while patient is asleep, 75% of HF patients report sleep disturbances and poor sleep quality (Jaarsma et al., 2021). These manifest as obstructive sleep apnea and sleep disordered breathing which interferes with the way patients sleep, including position, hours of sleep and sleep pattern, and it affects more than 50% of the patients, (Kishan et al., 2021). Psychological problems such as anxiety and depression may also cause luck of sleep in patients with HF as seen in the previous paragraph. Poor sleep quality may hinder the ability of patients to sufficiently carry out self-care management. Resulting into the worsen HF symptoms, increase readmissions, increased mortality and morbidity with increased healthcare costs, (Jaarsma et al., 2021). However, adherence to a healthy sleep pattern has been associated with low risks of HF in the general population, (Dayanand & Widomska Justyna, 2018). Asking patients about sleep issues can be an important step in diagnosis and management to assist patients deal with sleeping problems, thereby improving patient's overall health, while promoting positive self-care behavior that may lead to reduce readmissions, mortality and morbidity and reduce care costs.

Symptom monitoring is an important component in self-care management that should be precisely addressed by health care providers if patients are to adhere to self-care management. Monitoring of symptoms can be done by the patient, it can be done by patient caregivers, or remote monitoring devices that can be used to aid in patient symptom monitoring in advanced settings, (Jaarsma et al., 2021). It is important to know that patients have varying degrees of health literacy, technology and computer skills and that there is no collective way a group of patients might be monitored, breaking down information to patients so that they can understand

and be able to carry out symptom monitoring and react appropriately is key in self-care symptom monitoring, (Cajita, I. M., & Cajita. R. T., 2016);(Jaarsma et al., 2021).

Clinicians should continuously discuss symptom monitoring plan with patients from the time first contact and through admission and at every visit. A management plan should be discussed and agreed on how it will be carried out. Considerations are put on patient preference, resources available. The frequency of monitoring depends on patient's clinical status and stability. The monitoring period may be short if the patient clinical condition or medications has been changed, however long periods up to six months can be agreed upon if the patient has a stable heart failure, (Jaarsma et al., 2021).

Nurses should be able to educate patients about warning symptoms and when to notify the doctor. A blood pressure recording of 80/50 mmHg without heart symptoms, weight gain of more than 2kg within 5 days without symptoms, feeling of dizziness or light headedness when arising the disappears within 5 minutes; new onset of worsening fatigue, new onset of worsening leg weakness or decreases ability to exercise; difficulty in breathing than usual, chest pain which does not respond to medications; persistent rapid heart rate and feeling of a blackout or episodes of blackouts need to be reported to the doctor, and patients' needs to arrange for review before the symptoms worsen, (Ali & Banerjee, 2017); (Jaarsma et al., 2021).

Nursing are involved in the care of HF patients in the hospital and out of the hospital. During hospital stay nurses who are knowledgeable about HF self-care management teach patients about self-care using an effective and well evaluated strategies, (Strömberg, 2005). Health professional including nurses need to be knowledgeable in assessing patients to identify the self-care gaps as well as determine the amount of education delivered to the patients and their care givers, assess whether the information needs have been met, and confirm whether patients

have understood key self-care management strategies

Nurses' knowledge on the use of international guidelines for managing heart failure

Heart failure continues to be an important global health burden affecting both the developed, and the developing countries alike, the current prevalence of heart failure globally stands at 64 million individuals and the economic burden of HF is at estimated to 346.17billion United States dollars worldwide , this expenditure is expected to increase with the increase in the aging population, (Lippi & Sanchis-gomar, 2020). Heart failure is often associated with frequent hospitalization, long hospital stays and increased morbidity and mortality and results in significant financial burden to the health care, the patient and their families, (Ziaeian et al., 2017).

The care of patients with heart failure has evolved over time. An integrated approach to care guidelines by (Grady et al., 2000) was developed to try to deal with all areas of concern in HF, which include the systematic assessment and management; counselling and education of patients; promotion of patient compliance with the treatment regimen; and facilitation of hospital discharge/ implementation of outpatient models of healthcare delivery. This framework guides the holistic care of this group of patients. Heart Failure is a chronic condition that involves gradual wakening of patients' life's over a period of time, targeting and wakening patient s' physical capacity. It is important to teach patients ways that guide their life-style as early as possible to enable them live with the chronic illness for a long time.

The international guidelines of managing HF has two components; the pharmacologic which deals with the different drugs regiments according to HF class in which the patients is in as seen above and the self-care management which address a number of issues including sodium restriction in diet, symptom monitoring, adherence to medical treatment and promotion of

physical activity, (Son, Choi, & Lee, 2020). Educating patients about self-care empowers them to take control of their lives and adjust the lifestyle to be able to cope with the changes that are brought by HF.

Nurses spend more time with patients from admission to discharge and they end up creating trusting relationships with them that can be utilized to pass on important health information. Nurses who are knowledgeable about international guidelines for managing HF enables them to provide comprehensive care to their patients, (Sterne et al., 2014). Hence these benefits to patient have a multipliable effect whereby, when patients understand the importance of drug adherence and how to perform the different self-care practices, this may promote positive coping mechanisms that improve patients' self-care management, reduced hospitalizations, decreased costs of health care and significantly improves of quality of life, (Sterne et al., 2014).

Nurses who are involved in the care of patients with heart failure need to be familiar with the diagnosis, assessment and management of HF to be in position to effectively support patients with HF. Nurses need to know how HF presents and the different diagnostic tests. The primary diagnosis of HF is patient presentation of swelling in the lower legs and ankles, signs of difficulty in breathing, weight gain as compared to patient usual weight which is due to fluid retention in the tissues. The diagnostic tests used to confirm HF include chest x-ray, electrocardiograms and echocardiogram. Chest x-ray is used to reveal heart enlargement and accumulation of fluid in the lungs. Electrocardiogram records electrical activity of the heart and measure heart rhythm and changes in wall thickness. Echocardiogram uses sound waves to measure heart movements during contraction and relaxation and is used to calculate left ventricular ejection fraction (LVRF). LVEF represents the amount of blood pumped out of the

left ventricle within each contraction, and also denotes the degree of damage that has occurred in the heart muscle (Sharon Ann Hunt et al., 2009), All these diagnoses are done routinely at a cost for patients in order to arrive at a concrete diagnosis of HF and for continuous assessment and management to measure prognosis and assess the effectiveness of the drug and lifestyle management.

Nurse need to know the effect of HF on patients to be able to teach self-care management effectively, which include difficulty exercising because of reduced oxygen and blood supply to the tissues to ensure proper functioning. Edema due to fluid retention that occurs in the legs and ankles and may occur in the other parts of the body such as lungs, abdomen. Fluid accumulation in the lungs causes shortness of breath which worsens when lysing down and causes sleep disturbances. Effects of HF on the kidneys causes edema to increase and retentions of sodium and water thereby increasing fluid retention, and may cause congestive HF and neurological symptoms including memory loss and poor concentration (Sharon Ann Hunt et al., 2009a).

Nurses also need to know the consequences of HF symptoms to be able to explain them clearly to the patient, that these symptoms severely damage patients' ability to carry out activities of daily living. In a study done by (Lee et al., 2005) more than half of the patients reported poor health related quality of life that negatively affected their ability to perform activities of daily living. Patients with HF are often diagnosed with more than one chronic conditions for instance diabetes, kidney disease, dyslipidemia and others, this may complicates HF and increases the number of drugs patients have to take for survival, therefore patient need a lot of support and information, (Sharon Ann Hunt et al., 2009a). Increased number of symptoms, emotional, and economic burden coupled with frequent hospitalizations and poor health progression lead patients to face poor quality of life, (Lee et al., 2005).

The goal of effective treatment in HF is aimed at management of symptoms other than disease cure. Whereby self-management play an important role in promoting optimal functional statues of HF patients. Self-care management in HF includes rest, proper diet, modified daily activities and oral medications (American nurses association of critical-care nurses, 2011). Use of international guideline for the drug management of HF is widely accepted and practiced in the promotion of drug adherence of the following therapeutic care: Angiotensin-converting enzyme inhibitors (ACE) and vasodilators are used to aid in expanding blood vessels and support blood flow. Beta blockers help to block hormone receptor sites that cause fast heart beat and help restore normal rhythm, and digoxin is used to slow the heart rate by increasing the strength of cardiac contractility and restore normal heart rhythm, (Sharon Ann Hunt et al., 2009a). Diuretics are frequently prescribed to aid in elimination of excess fluid and supplements of potassium, and magnesium are often used to replace the electrolytes that could be lost during diuretic management, (Sharon Ann Hunt et al., 2009a).

Even with these developments in treatments more patients continue to deteriorate and nearly half of them die within five years of diagnosis, (Savarese, Gianluigi & Lund, 2017). Nurses play a pivotal role in the promoting positive patient outcome; patients with HF have unique needs that are slightly different from other patients, they need to be supported to be able to understand the illness and how to conduct self-care practices in order to live a health productive life as they go through the chronic illness**.**

Nurses' knowledge on the use of international guidelines in the management of HF may improve nurses participate in the care of patients with HF. Nurses who are knowledgeable about heart failure can also innovate new ways of patient education that can improve uptake utilization of self-care management practices in patients. For example, of an innovative patient education is

the teach back method. According to (Rahmani et al., 2020), teach back improves patient knowledge, performance, rate of readmission and quality of life significantly compared to ordinary methods of patient education such as verbal and written information.

Nurses who have been trained and are knowledgeable about HF self-care engage in training other colleagues and patients, leading to improved patient and care givers preparation for discharge, according to (Bläuer et al., 2015) training of nurses and skills training of patients hospitalized for HF improved patient preparation for discharge, however the living situations at home need to be considered. This means that educating patients and their care givers in the hospital may not be enough, a follow-up plan should be reinforcement after discharge by the nurses or the medical team to enhance support. This can be done after discharge by use of a phone call to frequently interact with patient while at home to find out how they are coping and offer solutions to some issues that patients may be experiencing at home, which may further enhance their knowledge of self-care and improve re-admission rate.

Nurses have been involved in the use of guidelines in the management of different conditions which promotes safe and quality care for both nurses and patients. In emergency medicine nurses are involved in the cardiopulmonary resuscitation which has number of life support guidelines that are used during life threatening events in and out of hospital. A prospective pre and post- test interventional study was done to assess knowledge and skills of cardiopulmonary resuscitation (CPR) among 32 nurses, the results showed that nurses had some knowledge at pretest, which improved significantly during post training, (Munezero et al., 2018). Another example is the use of pain assessment and management using international guidelines, where a cross-sectional study was conducted to assess nurses' knowledge attitude and practices associated with pain assessment and management, among 67 nurses. Results showed the pain

assessment scale commonly used was the verbal rating scale, and there was improvement in pain assessment, documents and administration of analgesia (Kiwanuka & Masaba, 2018). This shows that when nurses acquire knowledge on the use of the international guidelines, the quality and standard of care may improve significantly.

Attitude of Nurses on the use of International Guidelines for Managing HF at Uganda Heart Institute

According to an online dictionary, attitude is a feeling or opinion about something or someone or a way of behavior. In the developed countries the international guidelines for managing HF exist, and they are intended to improve patients' quality of care, (Sharon Ann Hunt et al., 2009b). Nurses who have a specialized knowledge in HF play a key role assessing the signs and symptoms of cardiac deterioration, assist in monitoring adherence to the prescribed therapy, and conduct patient education, psychosocial support as well as counselling. In a descriptive cross-sectional study design where a convince sample of 153 nurses was studied using a self-administered questionnaire. The results denote that there was generally low knowledge of the management of HF among nurses, much as the nurses attitude towards management of HF patients tended to be good, (Sanad, 2017).

In compared with Uganda, there is less literature about the subject, however, a lot is being done and less has been documented about the nurses' involvement in the management of patients with HF. There are international guidelines in place which the doctors have adopted for the management of patients with HF, however the same guidelines that are meant for the nursing management of HF have been fully implemented, (Uganda Heart Failure Registry). Literature shows that nurses attitude towards the management of patients with HF seem to be positive, as seen above, however, the practical aspects of the international guidelines for instance importance

of family involvement in the care of patients with HF have contradicting results regarding the nurses' attitude. Nurses agree that family is important in the care HF, however attitude towards inviting family to take part in patient care was less positive, (Gusdal et al., 2017). This may happen due the time it takes to engage family members in the care, and also some nurses may lack interest in patient education that may be due to lack of proper training.

In another cross-sectional study of pain assessment among nurses, 67 nurses were randomly selected, results showed that more than half of the nurses used the pain assessment tool and administered analgesics to patients, however, pain assessment findings were rarely discussed during nursing reports, (Kiwanuka & Masaba, 2018), this may happened if nurses do not attach enough importance on how they felt about sharing important patient findings among nurses. It may also happen if there are no guidelines in place to streamline patient care. In another descriptive cross-sectional study that explored nurses' perception and attitude towards oral care practices for mechanically ventilated patients, the results showed that most nurses followed specific oral care protocol, some perceived that oral care was unpleasant task, and some agreed that it was important for learn more about the best way to perform oral care, (Alja'afreh et al., 2018).

There are few studies that have been conducted about attitude of nursing in use of international guidelines for managing heart failure, however there are many studies that have been studied about attitude in the use of guidelines for managing different conditions among nurses which be related used to try to relate to the attitude of nurses on the use of international guidelines for managing heart failure. Like the study above, another study cross-sectional on nurses' knowledge and attitude towards diabetic ulcer care and the results showed that many nurses believed that diabetic care was time consuming to perform, and those nurses who often

shared knowledge with each other had a better attitude than those who were not, (Sari et al., 2022). Therefore, this study seeks to describe the knowledge and attitude on the use of international guidelines for management of HF among nurses at the Uganda heart institute, Mulago Hospital.

Summary

Chapter two has covered the review of literature of the dependent variable: the knowledge of nurses on the use of international guidelines for the management of HF and the independent variable: nurses' knowledge and attitude knowledge of heart failure management. Chapter three will cover the methodology of the research, including the study design; study setting; study population; inclusion and exclusion criteria; sample size determination; sampling technique and procedures, definition of variables; research instrument; data quality; data management; data analysis; ethical consideration and potential limitations to the study.

CHAPTER THREE

Methods

This chapter discusses the methods that has been used in the study. It gives a description of the study design, study area, study population, study tools, study variables, sample size estimation, sampling procedures, data collection, data analysis, and presentation, quality control, study limitations, ethical considerations, and dissemination of the study findings.

Study Design

The study employed descriptive cross-Sectional study design in which quantitative approach of data collection. Descriptive study design is used to observe, describe and document aspects of a situation as it naturally occurs and sometimes it is also used to serve as a starting point for generating research premise from individuals, organizations and communities (Abutabenjeh & Jaradat, 2018). This study design may ably describe the relationship among the study variables and enable the researcher to gather data from a wide range of respondents on perception on the use of international guideline for managing heart failure among nurses at Uganda Heart Institute. Descriptive research design is used when the researcher wants to collect large amount of data about a problem, however, descriptive study design has been criticized for being weak in the ability to support causal relationships since it can only describe relations among variables. Kesmodel (2018) pointed out that cross sectional research design seeks to focus on the issue under study at that point in time. Cross-sectional research design enables the researcher collect data over a specified period. Quantitative research approaches will be adopted, which involves the use and analysis of numerical data to answer research questions, (Apuke, 2017).

Study Setting

The study was carried out in Uganda Heart Institute (UHI) situated in Mulago National Referral Hospital in Uganda. This is the only specialized cardiac public hospital in the country where all patients from all over the country and beyond are referred. Uganda Heart Institute is located within Mulago hospital hill, Kampala central. It is 1.9 km from Kampala city (5minutes) via Dwaliro Road. Uganda heart institute receives over 20,000 patients annually who are referred from other healthcare hospital across the country and beyond with over 500,000 patients with HF annually. Additionally, most of the cardiac patients come for healthcare services. It is semi-autonomous institution where patients pay a small fee for the services offered compared to other private hospitals.

Study Population

This refer to the objects on which the research study is done (Saunders, 2009). The study population consisted of nurses and the target population is nurses working at Uganda Heart Institute. This is because this group of the target population are the ones who interact more with the HF patients, and they are on the forefront of administering care to these patients.

Scope of the Study

This study was carried out on illegible nurses working in Uganda Heart Institute from the month of April and May for a period of months. It was mainly describing the level of knowledge and attitude on the use of international guidelines for managing heart failure at Uganda Heart Institute.

Sampling Design

The study employed non-probability convenient sampling techniques in which readily available participants were recruited in the study. The nurses who were available and are involved in managing patients with HF at the Uganda heart institute participated in the study. Convenience sampling is a sampling strategy where research participants are selected basing on their accessibility and proximity, (Andrade, 2021). Convenient sampling was used because it is cheap, efficient and simple to implement, however the disadvantage of convenience sampling is that the sample lacks clear generalizability and they frequently yield biased estimates of the target population. Because the sample is non-randomly selected and various attributes of the sample population may be missed out, (Andrade, 2021). The study participants were selected among the nurses working in Uganda Heart Institute. Nurses working in Uganda Heart Institute were conveniently selected between the month April and May 2023 and all participants who were available and consented participated in the study.

Inclusion Criteria

The study sample were selected from nurses who have consent to participate in the study and have worked for more than six months working in Uganda Heart Institute. These are the nurses who have enough experience working with patients with heart failure, and have gained experience in managing heart failure.

Exclusion Criteria

Nurses who have worked in Uganda heart institute for less than six months, the trainees, and the nurses who may be too sick to participate in the study at the time of data collection.

Sample size Determination

Sample size was estimated using the formula by Kish Leslie (1965).

Sample size, $n = \frac{Z^2 a/2p\,(1-p)}{d^2}$

Where,

Z= standard normal distribution taken at 95%=1.95

N= sample size

P= estimated prevalence 50% or 0.5

q = 1-p = (1-0.5) = 0.5

d = allowable error = 5%=0.05

Therefore, $n = \frac{1.95^2 \times 0.5 \times 0.5}{0.05 \times 0.05}$

N = 380

The sample size is too big for the time frame and therefore it is important to scale down the sample size using formula for adjusted sample size

$$S = \frac{N}{1+N/\text{population size}}$$

S is the adjusted sample size

Population size is the expected number of subjects within the time frame

In this case

$$S = \frac{380}{1+ 380/100}$$

=79

Definition of Variables

Dependent variables

The use of international guidelines for managing heart failure among nurses at Uganda Heart Institute.

Independent variables

This is the nurses' knowledge and attitude on the use of the international guidelines for managing heart failure among nurses at Uganda Heart Institute.

Measurement of Variables

The participants will be required to fill in their biographic data, and then they answer the closed ended questions by ticking yes or no in the questionnaire. Participants are required to answer all questions.

Data Collection Tool

The data collection tool that was used in this study is a self-administered questionnaire. The respondents answered questions by completing questionnaire. Standardized Questionnaire was used in this study; the questionnaire had twenty closed ended questions that assess knowledge of heart failure. The closed ended questions are intended to restrict the responses so that to bring order to the responses and to obtain genuine responses from the respondents. Literature was reviewed to develop the ten questions that describe the attitude towards the use of international guidelines for managing heart failure. Additionally, this questionnaire was used to obtain information that enabled the researcher to describe the knowledge and attitude on the use of international guidelines for managing heart failure among nurses at Uganda Heart Institute, (Creswell, 2013).

Validity

The information collected during a research study needs to be justifiable and truthful (Amin, 2010). Validity is the extent at which research result can be interpreted and generalized

to other population and this can only be achieved when a sound or effective study instruments are used (Mohajan, 2017) . The questionnaire was standardized it had been used in other published studies, so it did not need to be pretested, however, the instruments was given to two experts in the subject matter and their views and guidance was used to correct the information in the instruments. Content Validity Index (C.V.I) shall be used to rate the result of rated items. Items rated highly by the experts will be divided by the total number of items in the questionnaire and if CVI above 0.7 is obtained then the instrument was considered valid (Amin, 2010). The administration of questionnaires was conducted at UHI premises; however, study piloting was not conducted because standard questionnaires was used.

Reliability

Research instrument is reliable if it can consistently collect same data under similar conditions (Mohajan, 2017). The instruments were subjected to several different respondent and assess whether similar information is obtained while collecting data on the similar phenomena. A correlation coefficient of 0.7 and above was considered reliable, (Mohajan, 2017). A semi-structure questionnaire written in English language will be used. A double data entry and continuous checking of the filled questionnaires, regular meetings and periodically review performances will be held.

Data Collection

The study involved obtaining a clearance from the Uganda Christian University research ethics committee and seeking of permission from the UHI research committee. The researcher selected participants for the study. The participants were briefed on the aims of the study and those who accepted to participate in the study were be given a self-administered questionnaire written in English. The researcher ensured that data collected is complete through continuous

cross checking of the self-administered questionnaires to ensure that there are no errors and omissions while study subjects can still be accessed. This was ensured accuracy and quality of collected data as well as avoiding wastage. The data was encoded at the end of each day of data collection, organized and kept in safe double locked safe room to avoid loss before entry into the computer for analysis.

Data Analysis

Nominal data was collected and used to label variables without quantitative value, for instance marital status (single, married, separated, divorced or widowed) which was assigned a quantitative value for differentiation. Ordinal data was collected in a Linkert scale when assessing attitude towards the use of international guidelines for managing heart failure among nurses. A Linkert scale was used to assess attitude in a scale of 1-5 and the ranking of answers was as follows: strongly agree, somewhat agree, neither/nor disagree, somewhat disagree, strongly disagree. Continuous data can be expressed in numeric values in form of fractions and numbers, for instance age of the respondents.

The questionnaire had section A: demographic data and section B: the research questions, were closed ended, section C was the Linkert scale with questions assessing attitude, the scale of 1-5 was used to assess attitude, descriptive statistics was used to present results in form of frequencies and percentages. The researcher was set up a standard procedure on how to code the different alternatives, for instance the demographic data which include: age, sex, marital status, level of education, type of specialized training in cardiac nursing attained, years of experience, name of the unit you are working. The closed ended research questions had a score of yes for a correct answer and no as the alternative. The demographic characteristics of the participants will

be analysed using descriptive statistics and the results were presented in frequencies and percentages.

The closed ended questions in section B assessing knowledge in the questionnaire has two options, “Yes” for a correct answer and “No” and the alternative, several one (1) was assigned to each correct answer and 0 (zero) was assigned to each wrong answer. Missing data was given numeric number 9 (nine). The document with these codes system was developed separately and entered in the computer for data entry. The two types of statistics used in analysing quantitative data includes descriptive and inferential statistics.

In descriptive analysis focuses on obtaining mean, median, mode, range, and standard deviation (SD). On the other hand, when the focus is on obtaining outcomes of statistical tests so as to make deductions from data collected inferential statistics are used. Therefore, to be able to test hypotheses and relate findings to other samples or populations, inferential analysis is best used. The types of statistical analysis used in inferential statistics includes scatter diagrams, linear regression, Pearson product-moment correlation index, ANOVA (F-test) and Spearman’s rank correlation coefficient are among techniques used in analysing inferential data (Stoudt et al., 2021). Statistical Package for Social Scientists (SPSS) was used when analysing data in this research. Descriptive data was analysed as frequency and percentages, mean and standard deviation. While Spearman correlation test was used to find association between study variables. P-value less than 0.05 was interpreted as significantly associated.

Ethical Consideration

The three principles of ethical consideration include: ethical approval which aimed at achieving the maximum degree of respect for the sacrifices made by others for science, (Bain, 2017). The researcher obtained ethical clearance from Uganda Christian University Research

committee to collect data from Uganda Heart Institute. At Uganda Heart Institute the researcher sought permission from the research ethical committee (REC) for ethical approval and to collect data at Uganda Heart Institute.

All participants were consented prior to their participation in the study, informed consent is the use of a written document signed by both the researcher and the respondent to participate in the research, it shows that the respondent has understood about the research and has chosen to participate but not coerced, (Ferreira & Serpa, 2018). All information collected will be confidential and only used for academic purpose. Confidentiality is ensuring the privacy of participants' information that they wish not to share with others without permission, (Bos, n.d.).

Study Limitations

The use of descriptive cross-sectional design in the research to describe the knowledge and attitude on the use of international guidelines for managing heart failure among nurses at Uganda Heart Institute, enables the researcher to describe attributes of the sample selected without manipulating any controls to ably understand the variables under study which limits the generalizability of the results. The results from convenient sampling design can only be generalized to the sub-population from which the sample was drown and not the entire population of the participants due the limited attributes of the participants which are drown from one place according to their accessibility and proximity.

To mitigate the issues above the researcher ensured that the questionnaire was cross examined for completeness and any missing information identified and clarified while the respondent is still available for corrections. The results from this study can be used as baseline to conduct more rigorous research to avail deep understanding of the study variables and to make results more generalizable.

Dissemination of the Study Findings

The study findings will be disseminated to Uganda Christian University library, and Uganda Christian University nursing department, Uganda Heart Institute publications, presented in public conferences and published in reputable journals. A similar study needs to be conducted covering a wider area and with a large sample size for the results to be statistically significant to enable generalizability.

CHAPTER FOUR

Results

This chapter presents the results of the analysis that is presented on the basis of the objectives that describe the knowledge and attitude on the use of international guidelines for management of Heart Failure among nurses at the Uganda Heart Institute, Mulago Hospital.

Demographic characteristics

Average age was 36.7 years with minimum age 27 and maximum age 58 years. 67% of the respondents were below 40 years.

Table 1 demographic characteristics of participants

Variable	Categories	Frequency	Percentage
Sex	Male	10	13.9%
	Female	62	86.1%
Education	Diploma	3	4.2%
	Degree	62	86.1%
	Masters	7	9.7%
Specialized training	CVOR	3	4.2%
	Cardiac critical care	3	4.2%
	Cardiac nursing	11	15.3%
	Critical care	12	16.7%
	none	43	59.6%
Experience	<5 yrs	20	27.7%
	6-10yrs	20	27.7%
	11-15yrs	11	15.3%
	16-20yrs	9	12.5%
	>21yrs	12	16.7%
Ward	Theatre	3	4.2%
	Admin	2	2.9%
	Coronary care unit	20	27.8%
	General ward	18	25.0%
	Intensive care unit	4	5.6%
	Out patient	25	34.7%

Knowledge score regarding management of heart failure using international guidelines

Knowledge regarding management of heart failure using international guidelines was assessed using 14 questions scored on a scale of 1-10, with 1 being little knowledge and 10 highest

knowledge. A score of 1-5 was considered poor knowledge while a score of 6-10 was considered good knowledge. Overall, 46.9% of the respondents had good knowledge about management of heart failure using international guidelines.

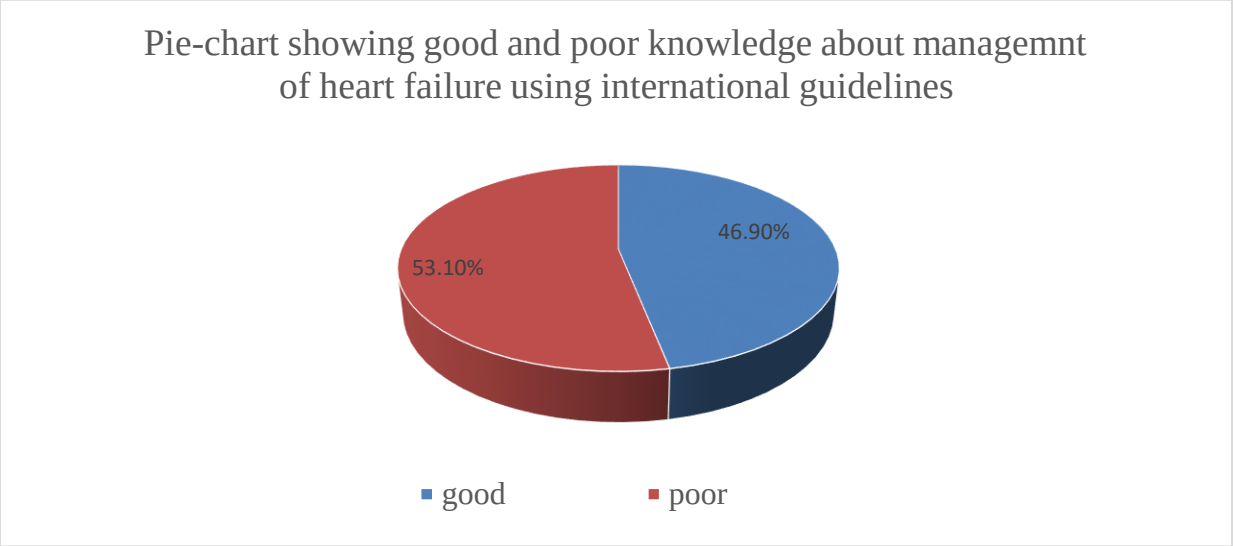

Figure 1. Good and poor knowledge of heart failure management

Knowledge Scores for Each Item Towards HF Management using international guidelines.

The questions where good knowledge was highly exhibited by participants were questions related to common symptoms like cough and nausea (93.1%), abdomen swelling (91.3%) and fluid limits (69.4%). Whereas, the questions which revealed low knowledge were questions related to activity (19.4%), lean meats (27.7%) and daily vs ideal weights (30.6%). The rest were averagely answered as shown in table 2 below.

Table 2 Knowledge Score on Each Item Towards Heart Failure Management using international guidelines among nurses

Question	Knowledge score	
	Poor N (%)	Good N (%)
Patients with heart failure should drink plenty of fluids each day	31(43.1)	41(56.9)
As long as no salt is added to foods, there are no dietary restrictions for patients with heart failure	45(62.5)	27(37.5)
Coughing and nausea/poor appetite are common symptoms of advanced heart failure	5(6.9)	67(93.1)
Patients with heart failure should decrease activity and most forms of active exercise should be avoided	58(80.6)	14(19.4)
If the patient gains more than 3 pounds in 48 hours without other heart failure symptoms, they should not be concerned	34(47.2)	38(52.8)
Swelling of the abdomen may indicate retention of excess fluid due to worsening heart failure	6(8.7)	63(91.3)
If patients take their medications as directed and follow the suggested lifestyle modifications, their heart failure condition will not return	39(54.2)	33(45.8)
When patients have aches and pains, aspirin and non-steroidal anti-inflammatory drugs (NSAIDs like ibuprofen) should be recommended.	29(40.3)	43(59.7)
If patients feel thirsty, it is OK to remove fluid limits and allow them to drink	22(30.6)	50(69.4)
When a patient adds extra pillows at night to relieve shortness of breath, this does not mean that the heart failure condition has worsened	37(51.4)	35(49.6)
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 heart failure condition has worsened	33(45.8)	39(54.2)
Lean meats are an acceptable food choice as part of the patient's diet.	52(72.3)	20(27.7)
Once the patient's heart failure symptoms are gone, there is no need for obtaining daily weights	32(44.4)	40(55.6)
When assessing weight results, today's weight should be compared with the patient's weight from yesterday, not the patient's ideal or dry weigh	50(69.4)	22(30.6)

Knowledge regarding signs and symptoms

Overall, 60.8% of the respondents had good knowledge about signs and symptoms of heart failure. Questions which had affirmative answers were passed better. Questions regarding BP recording of 80/56 and dizziness/lightheadedness were poorly answered as shown in the table and graph below.

Table 3: Knowledge Score on Each Item Towards symptoms of heart failure using international guidelines among nurses

Item	Knowledge	
	Good N (%)	Poor N (%)
BP recording of 80/56 without any heart failure symptoms	22(30.6)	50(69.4%)
Weight gain of 3 pounds in 5 days without symptoms	51(70.8)	21(29.2)
Dizziness or light headedness when arising that disappears within 5 minutes	23(31.9)	49(68.1)
New onset or worsening of fatigue	63(87.5)	9(12.5)
New onset of worsening leg weakness or decreased ability to exercise	60(83.3)	12(16.7)

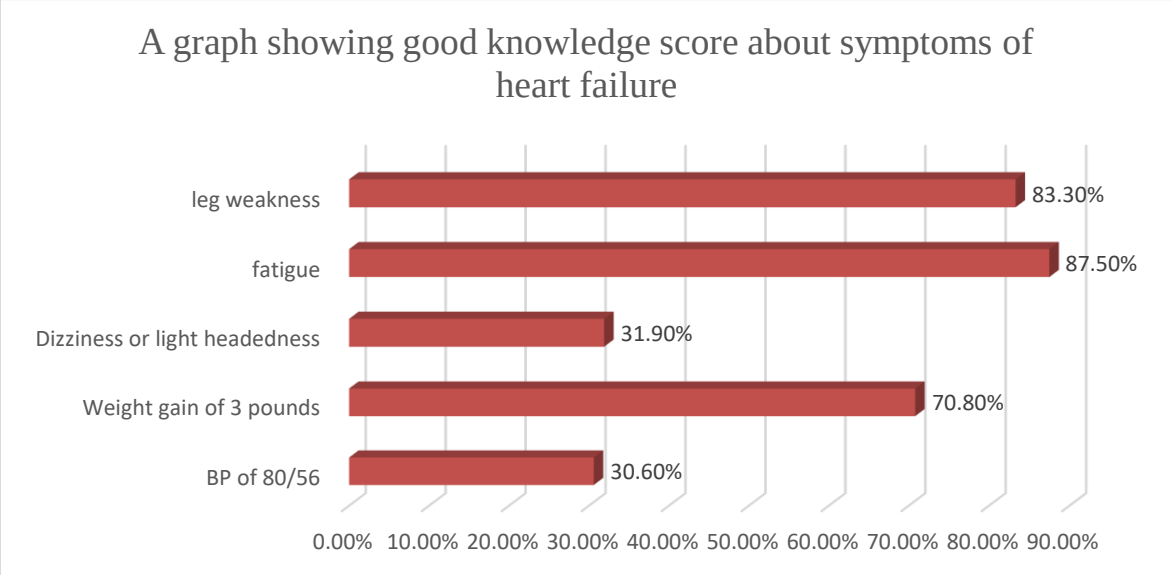

Figure 2. A graph of knowledge about symptoms of heart failure

Attitude of Nurses Towards Management of Heart Failure Using International Guidelines

Nurses were asked to score 10 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 72 respondents 48(66.7%) had positive attitude towards heart failure management (M = 3.8, SD= 3.3) as shown in graph 3 below.

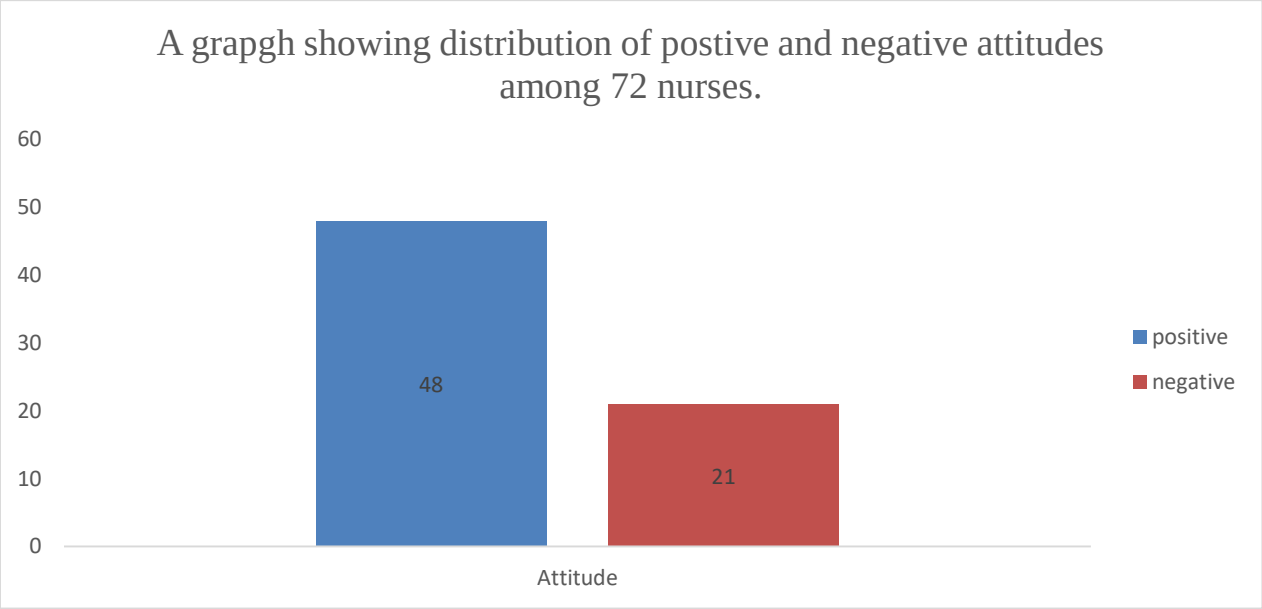

Figure 3: Showing positive and negative attitudes among nurses.

Proportionate distribution of attitude among various demographic characteristics

Participants who were male had nearly equal attitude compared to female (70.0% vs 68.7%) while all participants who had diploma had positive attitude just like those who had masters. Meanwhile, participants who had an experience of more than 20 years had a better attitude compared to all categories of experience. These and more details are shown in the table below.

Table 3: Distribution of Attitude Among Various Demographic Characteristics

Variable	**category**	**Attitude**	
		Positive N (%)	**Negative N (%)**
Age	<40yrs	33(68.7)	15(31.3)
	>40yrs	15(62.5)	9(37.5)
Sex	Male	7(70.0)	3(30.0)
	Female	41(66.1)	21(33.9)
Education	Diploma	3(100.0)	0(0.00)
	Degree	38((61.2)	24(38.8)
	Masters	7(100.0)	0(0.00)
Experience	0-5yrs	10(50.0)	10(50.0)
	6-10yrs	18(47.4)	20(52.6)
	11-15yrs	5(45.5)	6(54.5)
	16-20yrs	8(88.9)	1(11.1)
	>20yrs	7(58.3)	5(41.7)
Specialized training	CVOR	3(100.0)	0(0.0)
	Cardiac nursing	8(72.7)	3(27.3)
	Cardiac critical care	0(0.0)	3(100.0)
	Critical care	7(58.3)	5(41.7)
	none	30(69.8)	13(30.2)
Current Ward	Theatre	3(100.0)	0(0.0)
	Administration	0(0.0)	2(100.0)
	CCU	13(65.0)	7(35.0)
	General ward	15(83.3)	3(16.7)
	ICU	4(100.0)	0(0.0)
	OPD	13(52.0)	12(48.0)

CHAPTER FIVE

Discussion of Results

This chapter discusses the findings of the study in line with the specific objectives of the study. the discussion of the results is also based in comparison with studies of researchers in a similar area.

The first objective was to assess nurses' knowledge on the use of international guidelines for managing HF at Uganda heart institute.

The number of respondents were above average, the highest percentage of respondents where females they constituted 62% while males were 10%. Nursing has been known for being female dominated. However, the males have joined the profession, although there numbers are still few (Kearns & Mahon, 2021). 82% of the nurses are bachelor's prepared and the few with diplomas have been given a limited period to upgrade. Knowledgeable nurses play an important role in delivering quality care of patients with HF, which is in agreement with (Cui, Zhou, ma, sun,& Bishop, 2021). 86.1% of the nurses have some form of specialized training, it is argued that comprehensive training in cardiac nursing equips nurses with knowledge and skill to competently deliver cardiovascular care (Wiśnicka et al., 2022), this makes it possible for them to transfer skills to other nurses. There is a high retention rate among nurses working in Uganda Heart institute, 72% of nurses had working experience of 6-21 years working in the same hospital. The researcher was interested in years of experience of nurses in order to assess their level of knowledge on the use of international guidelines for managing heart failure over time.

About knowledge regarding management of heart failure using international guidelines, the results showed that 46.90% of the respondents had good knowledge about management of heart failure using international guidelines, this was higher than the findings of a study done in

Ethiopia where 185 respondents were assessed, (Demissie et al., 2021b). Where the level of knowledge on heart failure was found to be 30.56%. The difference in these results could be associated with less years in working experience and lack of specialization, 74.4% of the respondents in this study had less than 6 years of experience compared to the current study where more than 72% of the respondents had working experience of 6-21 years. Additionally, 72.88% of these nurses had no specialized training in cardiac care compared to the current study where about 86% of the respondents had some form of specialization which might have contributed to the higher knowledge scores. However, the difference in results could have been related to small number of respondents sampled in the current study, additionally the results of the current study showed higher levels of knowledge which might be because more nurses had working experience of more than 6 years, making it possible to retain knowledge gained over time which improves the level of heart failure knowledge over time. And 53.10% had poor knowledge.

There are common symptoms of advanced HF for instance abdominal swelling, chronic cough, nausea and fluid restriction and most respondents exhibited a high knowledge in this area, nurse-led heart failure self-care educations has appositive effect on patient outcome, this is in line with findings in the study by (Son, Choi & Lee, 2020) as noted in the literature review. The respondents had less knowledge on the areas of exercise (19.4%) the results contradicts with the literature that supports the importance of exercise in heart failure. Exercise is key in primary prevention of heart failure, exercise is also important in improvement of symptoms of heart failure and additionally, exercise is used to assess prognosis in heart failure, (Cattadori et al., 2018). Additionally exercise in heart failure patients should be individualized to match the fictional capacity of the patient to avoid complications, (Adamopoulos et al., 2019).

The results about the consumption of meat (27.7%) contract the study the supports the role of dietary approach in life-style modification in heart failure. Lean meat one of the components in the health diet recommended in cardiovascular patients, (Rocha & Aquino, 2022). The heart institute does not provide special diet to special patients which could have contributed to the low scores of some components on nurse's knowledge on the use of international guidelines for management of heart failure and the respondents had a fair knowledge on daily weight monitoring (30.6%). Patients with heart failure were not allowed to drink plenty of water each day. About a dietary sodium restriction, 62.5% had poor knowledge and only 27% had good knowledge, the results contradicts the need for dietary sodium restrictions among patients with heart failure, (Burgermaster, Redel, & Seres, 2020). The respondents could have miss interpreted this questions, that led to low scores.

On the issue of weight gain within 48 hours, 52.8% of the respondents had good knowledge. Rapid weight gain may indicate rapid fluid accumulation of fluids in heart failure patients which worsens the symptoms of heart failure, (Seid et al., 2019). The respondents are familiar with abdominal swelling as an indication of excess fluid in heart failure. 91.3% of the respondents had good knowledge. Additionally, on medication adherence and life style modifications and whether heart failure will not return, 54.2% of the respondents had poor knowledge on this area, this contradicts self-care practices in heart failure, (Aghajanloo et al., 2021). After taking medications and adhering to self-care recommendation and improving quality of life, some patients stop taking medications which commonly triggers heart failure symptoms. About the use of NSAIDS among patients with heart failure 59.7% of the respondents had good knowledge. NSAIDS are not prescribed in cardiac patients and this is in line with guidelines are the management of heart failure,(Sharon A. Hunt et al., 2002).

Knowledge regarding signs and symptoms of heart failure was moderate, 60.8% of the respondents had good knowledge about the subject, this could have associated to the experience the nurses gained over time in nursing patients with heart failure, (Aghajanloo et al., 2021). However, the questions on blood pressure recording and dizziness were poorly answered, this may be due to inadequate guideline on frequent assessment of this symptoms, (Cheng et al., 2023). The findings contradict with research results that confirm that most patients with heart failure frequently experience low cardiac output which often manifests as low blood pressure and may be associated with dizziness, (Natelson et al., 2021).

The second objective is to describe the nurses' attitude towards the use of the international guidelines for managing HF at Uganda Heart Institute.

Generally, the finding of the study showed that the respondents had a good attitude. Participants who were male had nearly equal attitude compared to females (70.0% vs 68.7%). All participants who had diploma had positive attitude similar to those who had masters. Additionally, respondents who had more than 20 years of experience had a better attitude compared to all categories of experiences. These findings are similar to the findings to the study done in Ethiopia, where nurses had a positive attitude towards use of international guidelines for the management of heart failure, (Demissie et al., 2021b).

Conclusion

The findings of this study demonstrate the importance of nurses' knowledge and attitude on the use of international guidelines for managing heart failure. The study assessed two variables and found out that knowledge and attitude had a significant effect on the use of international guidelines among nurses at Uganda heart institute. The findings showed that nurses had good attitude towards the use of international guidelines for management of patients with

heart failure regardless the educational level and gender. The findings of the study showed a good level of knowledge on the use of the international guidelines for managing patients with heart failure among nurses compared to a study in Ethiopia, however an interventional study needs to be carried out in order to increase the level of knowledge to satisfactory levels.

Recommendations

On the basis of the findings; the following recommendations are proposed to the management at Uganda Heart Institute: after identifying the gaps on nurses' knowledge on the use of international guidelines for managing heart failure, it is important to conduct an intervention to bridge the gap and practice using the international guidelines and then reassess knowledge and attitude to improve nursing practice in the management of heart failure. Plan to consider further training on heart failure management among nurses and reassess after a period of practice. Further study should be on patients to guide empowerment to live with chronic disease. The training should be more participatory than self-directed learning and also examine the training process.

Recommendations for further research

The researcher recommends that, further research should be conducted on the problem to assess knowledge and attitude, identify the gaps, conduct a training, allow practice and reassess to measure the effect of training on knowledge and attitude on the use of international guidelines for managing heart failure among nurses.

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Appendix A: Consent Form

UGANDA CHRISTIAN UNIVERSITY

School of Research and Postgraduate Studies

"A Center of Excellence in the Heart of Africa"

[redacted]

A study to describe the knowledge and attitude on the use of international guidelines for managing of heart failure among nurses at the Uganda Heart Institute, Mulago Hospital.

Consent Form for Participants

I have read the **Information Sheet for Participants** for this study and have had the details of the study explained to me. My questions about the study have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I also understand that I am free to withdraw from the study at any time, or to decline to answer any particular questions in the study. I agree to provide information to the researchers under the conditions of confidentiality set out on the **Information Sheet**.

I agree to participate in this study under the conditions set out in the **Information Sheet** form.

Signed: _____

Name: _____

Date: _____

Researcher's Name and contact information:

_____

Supervisor's Name and contact information:

_____

Letter of invitation

The study is to describe the knowledge and attitude on the use of international guideline for managing Heart Failure among nurses at the Uganda Heart Institute, Mulago Hospital.

There are no known risks to this study

The findings of this study may be used to empower nurses to be involved in planning nursing care for HF patients and other patients with other conditions, secondly nurses might be motived to develop patient education tools for the care of patients with other conditions after realizing the positive results from this study and thirdly it might improve the image of nursing after provision of holistic care.

The findings of this study might inform curriculum developers to include patient education modules as key components in the nursing syllabus to promote holistic care. Additionally, the findings of this research might emphasize patient education as a core at all levels of nurse training courses and institutions to promote student's competency in the delivery of nursing care, and as well as empower health care facilities to develop an in service training program to equip nurses with knowledge and skills to carry out patient education programs for patients with different conditions.

Inform policy makers to invest in special training for instance fellowship programs for nurses in different specialties to improve their knowledge and attitude towards nursing management of different conditions so that patients are taught and empowered with knowledge and skills to perform self-care practices. Recognize and sponsor outreach programs that promote

patient education in communities. Adopt and translate guidelines for the care of HF patients and roll out to benefit patients with other conditions. Inform health service commission to set job descriptions for nurse-patient educators and for nurses with specialized education.

In evidence-based practice nurses will be empowered to improve nursing standards using the best available evidence; and increase their knowledge on how to use available evidence to improve practice, promote the development of other patient-centered models of care, and enhance nurses' knowledge of HF. Enable institutions to adopt a full EBP for heart failure, to address challenges related to the preparation of HF patients for discharge for example importance of adequate nurse coverage in promoting patient discharge education, and the availability of discharge educational materials for successful patient education.

Appendix B: Knowledge Questionnaire

Topic: To Describe the knowledge and Attitude on the use of international guidelines for management of Heart Failure Among Nurses at the Uganda Heart Institute, Mulago Hospital.

Section A: demographic data

Age		Sex	
Level of education		Years of experience	
Type of specialized training		Name of ward/ unit your working	

Section B: Research Questions on knowledge of heart failure as included in the international guidelines
Instructions:
In a scale of 1-10, 1 means list level and 10 is the highest level of knowledge. please answer each question by placing a tick on the number to score your level of the use of the different aspects of the international guidelines for the management of heart failure. If you do not know the correct answer, give us your best guess but please answer every question.

No.	questions	1	2	3	4	5	6	7	8	9	10
1	It is allowed for patients with heart failure should drink plenty of fluids each day……...										
2	As long as no salt is added to foods, there are no dietary restrictions for patients with heart failure…… …..										
3	Symptoms such as coughing and nausea/poor appetite are common symptoms of advanced heart failure …….										
4	Patients with heart failure should decrease activity and most forms of active exercise should be avoided …….										
5	If the patient gains more than 1.5kg in 48 hours without other heart failure symptoms, they should not be concerned……										
6	Swelling of the abdomen may indicate retention of excess fluid due to worsening heart failure										
7	If patients take their medications as directed and follow the suggested lifestyle modifications, their heart failure condition will not return……										
8	When patients have aches and pains, aspirin and non-steroidal anti-inflammatory drugs (NSAIDs like ibuprofen) should be recommended.										
9	If patients feel thirsty, it is OK to remove fluid limits and allow them to drink……										
11	When a patient adds extra pillows at night to relieve shortness of breath, this does not mean that the heart failure condition has worsened……										
12	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 heart failure condition has worsened										
13	Lean meats are an acceptable food choice as part of the patient's diet.										
14	Once the patient's heart failure symptoms are gone, there is no need for obtaining daily weights……..										
15	When assessing weight results, today's weight should be compared with the patient's weight from yesterday, not the patient's ideal or dry weight……. weight……										

The following 5 statements are signs and symptoms that patients may have. On the scale of 1 -10 please place a tick to reflect your level of awareness whether the patient should notify their heart failure physician of these symptoms or not:
Need more information

scale

No	question	1	2	3	4	5	6	7	8	9	10
16	BP recording of 80/56 without any heart failure symptoms……..										
17	Weight gain of 1.5kg in 5 days without symptoms……										
18	Dizziness or light headedness when arising that disappears within 5 minutes……										
19	New onset or worsening of fatigue fatigue……										
20	New onset of worsening leg weakness or decreased ability to exercise……										

Appendix C: Attitude Questionnaire

Section C: Attitude of nurses on the use of international guidelines for managing heart failure

No	Variable	Strongly Agree 1	Some what Agree 2	Neither Agree/ nor disagree 3	Somewhat Disagree 4	Strongly Disagree 5
1.	I feel that the use of guidelines for managing HF increases nurses' participation in the care of patients					
2.	I feel as a nurse it is not important to use international guidelines for managing heart failure					
3.	I feel that getting involved in active management of patients with heart failure is not a waste of time					
4.	In my opinion there is nothing to learn about heart failure management and its guidelines					
5.	I do not use any guidelines for managing heart failure in my practice					

6.	I do not get satisfaction by caring for patients with heart failure using international guidelines					
7.	Using international guidelines to educate patients with heart failure does not help prevent complications					
8	International guidelines for managing heart failure are not important because heart failure is not a serious condition					
9	Heart failure is a chronic disease and is not important to educate patients using international guidelines					
10	Improving knowledge about heart failure care by using international guidelines does not increases levels of nursing care					

Appendix C: Waiver Letter to Conduct Research

INTERNAL MEMO

5th/July/2023

TO:

THE EXECUTIVE DIRECTIVE

UGANDA HEART INSTITUTE

THRU:

THE PRINCIPAL NURSING OFFICER

UGANDA HEART INSTITUTE

This is a key requirement to complete Master program. Forwarded for consideration 5/07/2023

FROM:

MUNANDA ATIFA

SENIOR ASSISTANT NURSING OFFICER (0774390333)

Dear Sir,

REF: REQUEST FOR A WAIVER FOR ADMINISTRATIVE CLEARANCE FEES WORTH U.S $15 TO CONDUCT ACADEMIC RESEARCH AT UGANDA HEART INSTITUTE

I am Munanda Atifa, a Senior Assistant Nursing Officer at Uganda Heart Institute. I am studying masters in nursing science at Uganda Christian University. I submitted my research work to the Uganda Christian University research committee for review and have been cleared to go ahead and collect data. The purpose of this letter is to request a waiver for Uganda Hear: institute Research Ethics Committee administrative clearance fees to collect data in the institute.

I will be grateful if my request meets your kind consideration. Thank you

Appendix D: Permission to Conduct Research

UGANDA HEART INSTITUTE

1st Floor, Block C, Mulago Hospital Complex P.O. Box 37392 Kampala, Uganda
Telephone: 0417720350 E-mail: info@uhi.go.ug; website: http://www.uhi.go.ug

Our Ref: ...**ADM/100/110/01**
Your Ref: .....

20th July, 2023

Ms. Munanda Atifa,
Faculty of Health Sciences,
Uganda Christian University,
MUKONO.

RE: PERMISSION TO CARRYOUT A RESEARCH STUDY AT UGANDA HEART INSTITUTE (UHI)

Reference is made to your letter dated 18th **July 2023** seeking for permission to carry out a study at Uganda Heart Institute (**The Research study titled: "To describe the knowledge and attitude on the use of international guidelines for management of heart failure among nurses at Uganda Heart Institute, Mulago Hospital").**

The purpose of this letter therefore, is to inform you that, you have been granted permission to carry out the study at **UHI.**

Dr. Sebatta Emis
CHAIRMAN RESEARCH COMMITTEE

Cc: Senior Hospital Administrator

Appendix E: Post Viva Form

UGANDA CHRISTIAN UNIVERSITY

A Centre of Excellence in the Heart of Africa

UGANDA CHRISTIAN UNIVERSITY

SCHOOL OF RESEARCH & POSTGRADUATE STUDIES

DISSERTATION CORRECTION COMPLIANCE REPORT BY THE CANDIDATE (POST VIVA FORM)

Date: 20/03/2024

Name of Candidate: MUNANDA ATIFA **Reg. No:** RM16M11/422

Title of Dissertation: Describe the knowledge and Attitude on the use of international guidelines for management of patients with Heart Failure Among Nurses at the Uganda Heart Institute, Mulago Hospital.

SN	COMMENTS BY EXTERNAL EXAMINER	ACTION TAKEN	INDICATOR
1	Chapter three was written in future tense as if it was a proposal	The future tense found in chapter three has been revised	Chapter three has been rewritten as per the external supervisor comments
2	The title is interesting and it is tackling an important aspect of nursing practice; however, it is stated in form of an objective. It should therefore be changed as suggested in the dissertation.	The warding on the topic has been changed as per the comments of the external supervisor	The word "To" has been removed from the topic of the study
3	The background and introduction are somehow mixed up	The background and the introduction have been reviewed to reflect the comments of the external supervisor	all the comments have been included in the corrections

SN	COMMENTS BY VIVA VOCE PANNEL	ACTION TAKEN	INDICATOR
1	To rewrite the title of the study.	The title has been rewritten	Research title revised
2	To rewrite conclusions for each of the objective.	Re-written conclusions for each of the objectives	Added this information in the revised version of the book
3	The problem statement should be tightened including citations.	The problem statement has been reviewed	All corrections have been included in the problem statement
4	To rewrite the recommendations	Recommendations have been re-written	All corrections have been included

Munanda Atifa ..... **Mary Grace Nakate** .....

Candidate's Name Signture Supervisor's Name Signature