CHAPTER 1

BACKGROUND AND ORGANIZING FRAMEWORK

Introduction

Chronic heart failure is when the heart is working insufficiently, pumping too weakly causing build up of fluid in the lungs among other organs, creating a feeling of breathlessness (Robert & Griffith, 2005). It occurs equally in men and in women (Robert & Griffith, 2005). Cowie (2002) in contrast stated that chronic heart failure is 75% higher in men than in women. Robert and Griffith (2005) and Cline, Israelsson, Willenheimer, Broms and Erhardt (2000) agreed that chronic heart failure affects older adults who are more than 65 years more than young adults. In Africa heart failure occurs early in life than in the developed world and the mean age of women with chronic heart failure is 53.9 years with minimum age of 14 years (Owusu, 2007). Men have a mean age of 58,4 years with the minimum age of 24 years.

Problem Statement

Medical surgical nursing focuses in the reduction of patient readmission. Chronic heart failure is the most common cause of hospitalizations due to cardiovascular disease in the patients more than 65 years of age and is associated with readmission often within 30 days (Cline, Israelsson, Willenheimer, Broms & Erhardt, 2000). In Zimbabwe there is limited literature on the number of readmissions in chronic heart failure patients and as health care cost continue to escalate with minimum resources due to the current economic situation there was need to identify how frequently the chronic heart failure patients are being readmitted into hospital.

Nyamakura (1999) found that there was a mean readmission of 2.6 in two years among the adults with chronic heart failure at a central hospital in Zimbabwe. In Africa, cardiovascular diseases account for 7-10% of all medical admissions with chronic heart failure contributing 3-7% of these admissions (Mayosi, 2007). The age group 61-69 years has the highest frequency of readmission in Africa (Owusu, 2007).

Sixty-five percent of hospital consultation for heart failure requires hospitalization in England (Hospital Episodes Statistics Department of Health, 2006) and 90% of the hospital consultations episodes are said to require emergency hospitalization. The mean age for the hospitalized chronic heart failure patients is 77 years in Europe.

Cleland (2002) stated that 5% of medical beds are occupied with chronic heart failure patients and he went on to say that broader definitions of heart failure suggest that it may be 2-4 times higher than 5%. Cleland (2002) also stated that one third (1/3) of the patients with chronic heart failure would be hospitalized in any given year, reflecting the more severe end of the disease spectrum in terms of morbidity and mortality. Chronic heart failure accounts for 5% of acute medical admissions (Cowie, 2002, Mostered & Hoes, 2007).

Readmissions with chronic heart failure pose an economic burden on the health care budget. Owusu (2007) stated that up to 3% of the total health budget is expended on the management of chronic heart failure in Africa. Cleland (2002) identified that hospitalization of chronic heart failure patients account for 65% of health care costs in managing heart failure. National Health Service spends at least £400 million per year

on the care of the heart failure patients (Cowie, 2002). McDonagh (2002) stated that chronic heart failure is expensive to manage with 20-30% of the patients with chronic heart failure being hospitalized at least once per annum and this leads to a total expenditure amounting to1-2% of the total National Health Services (NHS) budget, most of which is attributable to hospitalization.

Self-care practice is the individual's ability to manage the symptoms, medication and diet, and rest and activity/exercise inherent in living with a chronic condition such as chronic heart failure (Schiffer, Denollet, Widdershoven, Hendriks & Smith, 2007). Poor self-care practices are associated with an increased adverse clinical outcome in chronic heart failure. Bruggink-Andre de la Porte (2007) identified that 50% of early readmissions were preventable, with factors such as poor compliance with medication or diet, sub-optimal discharge planning and follow up and inadequate self-care practices by patients with heart failure being the most important determinants of deterioration and readmissions.

Gary (2006) identified that for many patients complex medication regimen, symptom monitoring and required decision-making complicate performing self-care. People with chronic heart failure are typically older and more physically debilitated and have more co-morbidities and maybe at a higher risk for poor self-care practices and resultantly increased readmission rates (Gary, 2006). According to Artinian, Sloan and Lange (2002) one way to prevent readmissions and promote positive health outcomes among patients with chronic heart failure is to ensure that the amount and quality of self-care practices used are appropriate to the patient's situation.

Research and documented evidence on self-care practices in chronic heart failure patients is critical as a source of reference for medical surgical nurse practitioners but is lacking in Zimbabwe. Nursing research that has been done has been on self-care knowledge and readmissions in chronic heart failure. Nyamakura (1999) identified that as self-care knowledge increases the readmission among chronic heart failure patients decreases. Thus the medical surgical nurse practitioner should assess factors that may affect self-care practices, promote good self-care practices and prevent exacerbation of symptoms significantly reducing the number of unplanned readmission, and improving quality of life.

This study examined the relationship between self-care practices and readmissions among adult patients with chronic heart failure at a central hospital in Harare. This study used Orem's self-care model to contribute to the body of knowledge for the discipline of nursing.

Purpose of the Study

The purpose of this descriptive correlational study was to describe and examine the relationship between self-care practices and readmissions among the adults aged 40-80 years with chronic heart failure.

Theoretical Framework

The self-care model by Dorothea Orem (1991) was used to guide this study. The major concepts in Orem's Self-care Model are self-care, self-care agency, nursing care agency, self-care deficit, therapeutic self-care demand and an additional concept known as basic conditional factors Orem (1991). Self care is the deliberate action that

is self initiated, self-directed and controlled in regard to presenting conditions and circumstances (Fitzpatrick & Whall, 1996). Self-care agency is the capabilities of the person for accomplishing self-care demands Orem (1991). In this study the chronic heart failure patient is the self-care agent with self-care agency for accomplishing therapeutic self-care demands. Self-care demands are influenced by self-care requisites which can be universal, developmental and health deviations (Fitzpatrick & Whall, 1996). If self-care demands exceed self-care agency, self-care deficit occurs. It is this deficit that the nursing agency tries to fill in to meet the patient's self-care demands.

Nursing agency is the nursing profession or the nurses with their expertise, (Fawcett, 1995). Nursing agency will use one of the 3 basic nursing systems (scope of the nursing responsibility in the health care situations). The basic nursing systems are wholly compensatory where the nurses accomplish the patient's therapeutic self-care demands, partly compensatory where the nurse performs some of the self-care activities for the patient and the supportive educative Orem (1991). In the supportive educative system, the nurse provides education and support to the patient as he/she performs self-care activities. The self-care agents need to be empowered with knowledge, skill and experience to practice self-care.

Basic conditioning factors are defined as human and environmental characteristics that affect the person's self-care agency (Fitzpatrick & Whall, 1996). In this study, self-care practices were similar to the self-care agency and self-care was

equated to readmissions and basic conditioning factors were defined as the adult chronic heart failure patients' demographic characteristics. (See Figure 1).

Conceptual definitions of terms

Adult chronic heart failure patient

The term referred to male and female patients aged between 40 and 80 years with heart failure that was diagnosed 3 years or more before the date of the interview.

Basic conditioning factors

These are human and environmental properties that affect the self-care agency and therapeutic self-care demand (Fritzpatrik & Whall, 1996). In the study, the basic conditioning factors were the sample demographics such as age, gender and resource availability and adequacy.

Self-care

Activities that individuals initiate on their own behalf in maintaining life, health and wellbeing (Orem, 1991).

Self-care agency

Self-care agency is the capabilities of the person for accomplishing self-care demands (Orem, 1991). In the study, self-care agency meant the adult chronic heart failure patients' ability to adhere to prescribed diet and medications, ability to manage symptoms and following recommended rest and activities/exercise.

Self-care practices

Actions rather than thoughts or ideas, usually done as a habit, custom or tradition by one for oneself (Meleis, 1991)

In this study self-care practices referred to range of activities that adults with chronic heart failure perform to promote well-being or meet basic health needs such as adhering to prescribed diet and medications, symptom management and rest and activity (Makhubela, 2002).

Readmissions

The term referred to the number of episodes that a chronic heart failure patient comes back into hospital for treatment and close monitoring for cardiac symptoms (Riegel & Carlson, 2009).

Research Objectives

The objectives of this study were to:

1   Identify self-care practices among adults aged 40-80 years with chronic heart failure

2   Identify the number of readmissions among adults aged 40-80 years with chronic heart failure.

3   Determine the relationship between self-care practices and readmissions among adults aged 40-80 years with chronic heart failure.

Model concepts

SELF-CARE AGENCY	- - - →	SELF-CARE

SUPPORTIVE-EDUCATIVE NURSING SYSTEM

NURSING AGENCY - - - → SUPPORTIVE-EDUCATIVE NURSING SYSTEM
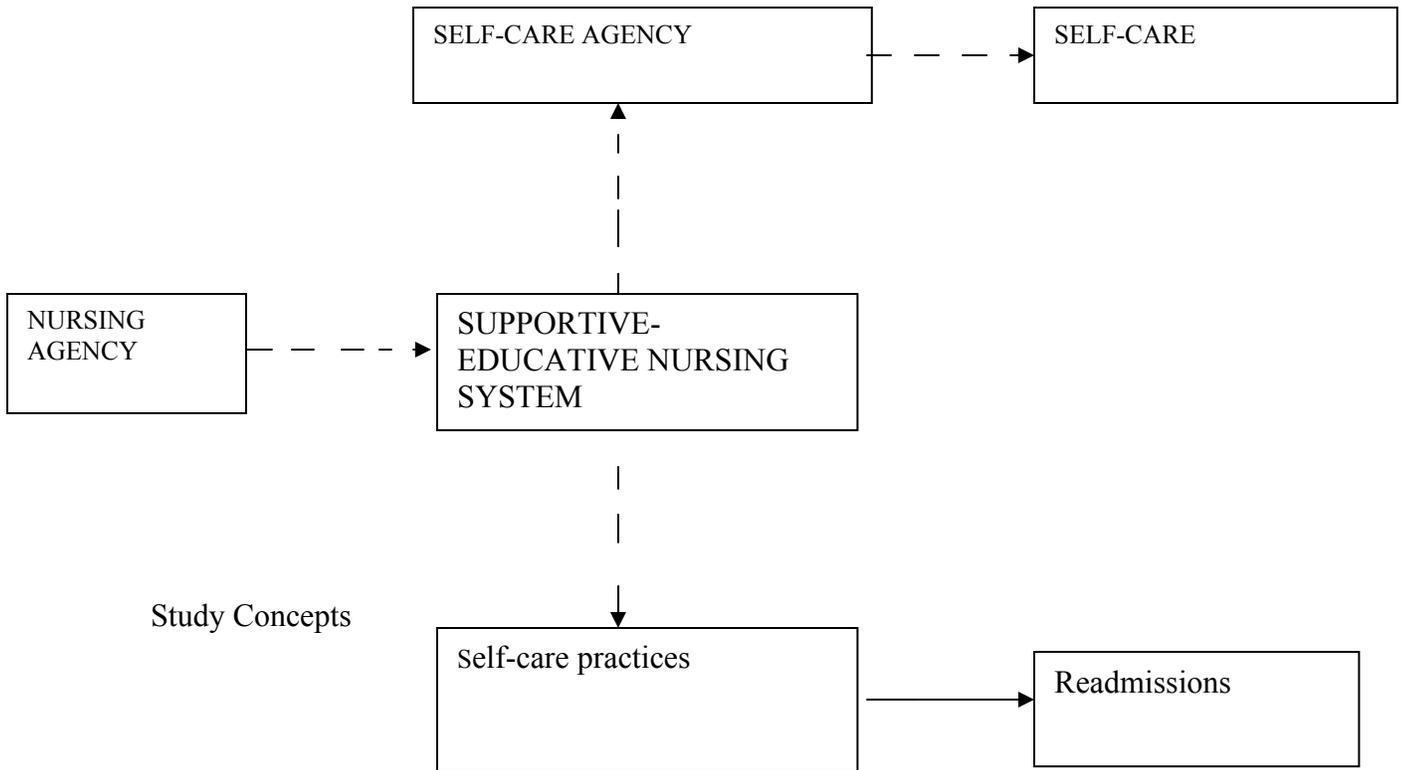
Study Concepts

Self-care practices → Readmissions

Figure 1 Conceptual framework adapted from Dorothea Orem (1991).

Research Questions

1   What are the self-care practices of adults aged 40-80 years with chronic heart failure?

2   What is the number of readmissions among adults aged 40-80 years with chronic heart failure?

3   What is the relationship between self-care practices and readmissions among adults aged 40-80 years with chronic heart failure?

Significance to Nursing

The purpose of this study was to examine the relationship between self-care practices and readmissions in adults aged 40 to 80 years with chronic heart failure. Medical Surgical nurse practitioners focus on clinical nursing practice hence this study may contribute towards the management of patients with chronic heart failure, research, education and administration. This study will help to increase the body of knowledge of nursing as new information about self-care practices and readmissions was discovered. Identifying self-care practices of these patients in relation to readmissions may identify gaps in the clinical management of these patients. Filling of the identified gaps by the medical surgical nurse practitioner may reduce readmissions, hospital costs and mortality and this will have a major impact upon longevity and quality of life. Medical surgical nurse practitioner plays a major role in promoting health through the provision of information pertinent to self-care practices. Research on self-care practices is needed to generate information for health care

professionals to understand areas needed for improved self-care practices in order to assist communities according to their self-care needs and improve quality of care.

Summary

Chronic heart failure is a common syndrome in the developed countries and is increasingly becoming a problem in the developing countries worldwide (Mayosi, 2007). It is associated with poor quality of life, frequent readmissions and early deaths (Riegel & Dickson, 2008). Studies from developed and developing countries confirm that there is an increase in readmissions of patients with chronic heart failure. These hospitalizations account for sixty-five percent of health care costs in managing heart failure. Readmissions are attributed to poor self-care practices. The medical surgical nurse practitioner is challenged to promote good self-care practices to improve quality of life among patients with chronic heart failure. This study examined the relationship between the self-care practices and readmissions among the patients with chronic heart failure using Orem's self-care model to guide the study.

CHAPTER 2

LITERATURE REVIEW

Literature review is a process that involves reviewing relevant literature to gain a broad background or understanding of the information that is available related to a problem (Burns & Grove, 1997). This chapter will review readmissions as the dependent variable and self-care practices of patients with chronic heart failure as the independent variable. Other studies that have used Dorothea Orem's self-care model will be presented.

Readmissions Among Chronic Heart Failure Patients

All too frequently, patients keep on returning to the clinic and hospitals for recurring episodes of cardiac failure. Readmission does not only create physiologic burden on the patient but also psychologic, sociologic and financial problems (Robert & Bowling, 2001). Body organs may be damaged because repeated attacks can lead to pulmonary fibrosis, liver cirrhosis, enlargement of the spleen and kidney and even brain damage due to insufficient oxygen during the attacks (Phipps, Sands & Marek, 1999).

Eighty percent of the first diagnoses of heart failure occur at a time of hospitalization and one third of the patients with chronic heart failure will be readmitted within any given year (Cowie, 2002, MacDonagh, 2002). Many patients with chronic heart failure will be readmitted within the following six months (Cleland, 2002; Robert & Bowling, 2001). From the patients' perspective, chronic heart failure is characterized by a vicious circle of worsening symptoms, acute decompensation,

hospitalization and subsequent stabilization and discharge. However, because patients feel better after hospitalization, they feel they don't need to take so many tablets. There is poor adherence to medication leading to readmissions and the need to restabilize the patient (Grange, 2005). One way to prevent readmissions and promote positive health outcomes among patients with heart failure is to ensure that amount and quality of self-care used is appropriate to the patient's situation (Artinian, Maqnan, Sloan & Lange, 2002).

Readmissions are also increased by co-morbidities in chronic heart failure where the risk of hospitalization and potentially preventable hospitalization strongly increased with number of conditions (Chim & Mancini, 2007). For this reason, patients with other non-cardiac conditions will be excluded from this study.

In Zimbabwe there appear to be no statistics documented on number of readmissions among patients with chronic heart failure. Nyamakura (1999) did a study on self-care knowledge and readmissions in chronic heart failure at a central hospital in Harare, Zimbabwe. The results showed out of the 80 subjects, 68 (85%) had been readmitted at least once in the past 2 years. There was a mean readmission of 2.6 and the number of readmissions ranged from 0 to 6 in the period 1997 and 1999. Most of the studies done in the developed countries show the percentages of people admitted during a certain period. Readmissions with the associated hospital expenses are a cause of concern, thus this study sought to identify the number of readmissions among patients with chronic heart failure at one of the central hospitals in Zimbabwe.

Cline, Israelsson, Willenheimer, Broms and Erhardt (2000) carried out a randomized control study at Malmo Hospital in Sweden where they wanted to determine cost effective management programs to reduce readmission of patients with chronic heart failure. The intervention group received health education, on self-care; they were given medication organizers with follow-up to check if they were adhering to the recommended treatment. The control group was managed according to routine clinical practice. Fewer patients were readmitted in the intervention group than in the control (risk ratio 0.72 p=0.08). The mean number of readmissions was 36% lower in the intervention group than in the control group. Cline, Israelsson, Willenheimer, Broms and Erhardt (2000) also agrees with Chim and Mancini (2007) that concomitant disease in heart failure patients increases readmission. However, the authors acknowledge the possibility of imitation (diffusion) as a threat to internal validity of the study.

Bruggink et al (2007) did a study in Netherlands to determine whether an intensive intervention at a heart failure clinic reduces incidence of hospitalization for worsening heart failure. Intervention group received verbal and written comprehensive education on recommendation for exercise and rest, advice for symptom management and easy access to the clinic where they were assessed if they were adhering to the recommended practices. There were follow up visits by the cardiovascular nurse and/or the clinician to check if they were adhering to the self-care practices in their home environments.

After a year, the total number of readmissions for worsening heart failure in the intervention group (n=118) was lower than in the control group (n=112) (23vs 47). It was concluded that self-care practices by chronic heart failure patients with the intensive reinforcement by cardiovascular nurse reduce readmission, and health care costs (Bruggink et al, 2007). These results were supported by Rich et al (2002) who did a prospective randomized study with 98 patients aged above 70 years to determine the feasibility and potential impact of a non pharmacologic intervention for reducing hospital readmissions in the elderly patients with congestive cardiac failure. The intervention included giving specific recommendations designed to improve compliance and reduce side effects, teaching by dietician and close follow up by home care and the study team. The patients were followed up after 90 days. The readmission rate was 33.3% (22.7%-44.9%) in the intervention group and 45.7% (29.2%-62.2%) in the control group.

Mejhert, Kahan, Pearson and Edner (2004) had different findings in their study in which they wanted to evaluate long term effects of a management program for chronic heart failure. Patients would pay regular visits to the outpatients' clinic and were encouraged to keep in contact with the nurse. Patients were given dietary advice and adherence to self-care practices was assessed. The intervention did not change number of readmission significantly. However, there was a longer time to first readmission in the intervention group than the control group (246 days vs. 142 days). The study did not take into consideration that self-care is the actions that patients engage in their home environment (Orem, 1991). It is not mentioned whether there

were visits to the subjects' home to check how they were adhering to the recommended self-care practices.

Jovicic, Holroyd-Leduc and Strausus (2009) did a research on the effects of self-care practices on health outcomes that is hospital readmission rate, mortality and health related quality of life in patients who were 18 years and older who were diagnosed with chronic heart failure. The study was done in six randomized control trials with 857 patients. The conclusion was that self care practices programs target for heart failure decreases overall hospital readmissions and readmissions for heart failure. However, Riegel and Carlson (2002) identified that self-care among heart failure patients is very poor and therefore readmission rate continues to be very high. The qualitative study sited lack of knowledge, debilitating symptoms, physical limitations and difficulties coping with the symptoms as barriers to good self-care practices. Lack of knowledge as a reason for poor self-care practices contradicts with Hanyu, Nauman and Burgess (1999) who discovered that 80% of the patients knew that they should limit salt but only a third adhered to a low salt diet. This might be explained by Hardman (2002) who argued that patients might have the knowledge but for some reasons they do not practice the recommended management of cardiac symptoms.

In another study done by Annema, Luttik and Jaarsma (2009) to determine reasons for readmissions from patients', caregivers' and health care providers' perspectives, non adherence to medications and diet was sited by 36% of the caregivers, 56% of the patients and 65% of the health care providers as the major contributing factor for readmission. Vinson, Rich and Sperry (2000) and Bennet,

Huster and Baker (2004) also cited non adherence to medication and diet as an important factor that significantly contribute to readmissions. Bennet, Huster and Baker (2004) identified that 55% of heart failure readmissions were due to sodium and volume overload. Robert and Bowling (2001) described a low salt diet of 2-3g per day as a basic component in the treatment of heart failure.

Carlson and Riegel (2009) did a descriptive, cross sectional comparative survey to assess self-care abilities of patients with chronic heart failure. The study identified duration of condition as affecting recognition of signs and symptoms. Thr recognition of signs and symptoms was difficult in newly diagnosed and easier for experienced patients. Self-care responses to symptoms experienced by experienced patients were better than for the newly diagnosed. This may explain why most patients (30-40%) with chronic heart failure will be readmitted within the following six months from the day of first diagnosis (Cleland, 2002; Robert & Bowling, 2001).

Heart Failure Society of America (2002) identified barriers to adherence to treatment plan. These include forgetfulness to take medicines, side effects of drugs, trouble going away from home when taking diuretics, trouble paying for the pills, getting up at night to go to the bathroom, lack of time and energy to exercise, inability to cook and being unable to find recommended foods or discover that the food is expensive. These barriers make it difficult for the chronic heart failure patients to follow the treatment plan and this will subsequently lead to increased number of readmissions.

Self-care practices of chronic heart failure patients

Self-care practices are actions rather than thoughts or ideas, usually done as a habit, custom or tradition by one for oneself (Meleis, 1991). Self-care therefore becomes the major determinant of health outcome for patients with chronic conditions such as chronic heart failure because majority of the health care is carried out by the patient in the patient's own environments. According to Jolly (2004) chronic heart failure patients need education and support to enable them to be able to provide self-care for their chronic illness as this can have a knock-on effect in terms of non adherence both with pharmacological and non pharmacological treatments.

According to a study carried out by Garry (2006) where the subjects were women with diastolic heart failure, low socioeconomic status and advanced age increases vulnerability for poor self-care practices among the economically disadvantaged. Riegel and Dickson (2008) discovered that self-care is better in patients with more knowledge, skill, and experience as well as when the recommended self-care practices are compatible with the patients' values. This is supported by Artinian, Maqnan, Sloan and Lange (2002) who discovered that there was a significant relationship (r=.21, p=.026) between the mean total knowledge score and the total mean self-care score. This was done with 26 chronic heart failure patients who were 18 years and above. This meant that when patients have the self-care knowledge they engage in self-care practices that maintain health and wellbeing. However, Hardman

(2002) argued that knowledge alone is not enough to change behaviour, explaining why most published studies suggest that non-compliance following health advice could be as high as 50%. This is why this research study sought to examine the self-care practices done by the patients with chronic heart failure because as Hardman (2002) argues patients might have the knowledge but for some reasons they might not practice the recommended management of cardiac symptoms.

In a study to determine factors that influence medication adherence among patients with chronic heart failure, Rong, Moser, Lennie, Peden, Chen & Heo (2008) discovered that patients make connections and this enhances medication adherence. Participants in this study connected knowledge of their illness and their symptoms with their medications effectiveness in decreasing these symptoms. Participants in this study relied on environmental cues as reminders to take their medications, resulting in a habit of daily medication use. The authors also discovered that education that helps patients understand their illness particularly symptoms and how medications help them may be beneficial in promoting adherence.

Gary (2006) found out that decision about self-care practices such as taking diuretics was based on daily plans and social outings. Seventy-two percent of the women with diastolic heart failure consistently took the prescribed medication and this was the only self-care practice that was consistent. Gary (2006) agrees with Conn (1991) on their findings on medication administration. Conn (1991) also discovered that medication administration was the most consistent in a study to examine the self-care practice that older adults engage in to manage colds and influenza.

Chronic heart failure patients are usually admitted with swollen ankles and feet, shortness of breath, fatigue, cough and sometimes palpitations at rest. These are attributed to sodium retention (Schiffer, Denollet, Wildershoven, Hendriks & Smith, 2007; Robert & Bowling, 2001). Frusemide, a loop diuretic is prescribed to alleviate some of these symptoms (Robert & Bowling, 2001). Chronic heart failure patients should therefore adhere to prescribed low sodium diet. Patients on low salt diet (2-3g per day) should examine labels of processed foods, drugs such as laxatives, antacids and some cough mixtures to ascertain their sodium content (Phipps, Sands & Marek, 1999).

Patients with chronic heart failure are required to follow a complex behavioral regimen, which usually includes taking a considerable number of different medicines and making dietary changes. These are intended to reduce readmission and length of hospital stay if admitted (Hardman, 2002). In a study to determine factors influencing adherence to self-care among patients with chronic heart failure, Hanyu, Nauman and Burgess (2000) discovered that 80% of the patients knew that they should limit salt but only one third avoided high sodium foods and 25% did not understand alcohol risk associated with chronic heart failure. This is in line with Mcntyre, Barret, Murphy, Sutcliffe and Walker, (2002) who also attributed readmissions to reduced adherence to medications.

According to the European Heart Failure Self-care Behavior Scale (2006), the symptoms of heart failure exacerbation include weight gain of 2kg per week, shortness of breath, increased fatigue and swollen feet and legs. Robert and Bowling (2001)

described frequent measurement of weight as a cornerstone of therapy and they suggested that a weight gain of 1.5-2kg per week may signal the need for a change in therapy and should precipitate a call to the physician. One important aspect of self-care practice is consultation behaviour that is consulting a health care provider when experiencing cardiac symptoms (Bruggink et al, 2007).

Findings in many studies reveal that inadequate self-care management by patients in case of worsening symptoms of heart failure is one of the determinants of deterioration and readmission (Gary, 2006). Self-care practices and adequate consultation behaviours are essential for the successful treatment of chronic heart failure. (Riegel & Dickson, 2008 & Schiffer et al, 2007; Mcntyre, Barret, Murphy, Sutcliffe & Walker, 2002).

Gary (2006) discovered that medical attention was only sought when acute or life-threatening symptoms occurred and only a few women actively participated in ongoing symptom monitoring and there was confusion over symptom recognition. This is in agreement with Gibbs, McCoy, Gibbs, Rogers and Addington-Hall, (2002) who identified confusion on the recognition of symptoms in older adults. In a study carried out by Gary, (2006), only 19% of the women with diastolic heart failure weighed themselves daily. Lockwood, Herras-Malo and Guitierez (2006) identified that half of the study participants knew how to weigh themselves, 87% had scales but only 30% actually weighed daily. This results in patients presenting to hospital with severe oedema and sometimes pulmonary oedema that warrants hospitalization.

Gibbs, McCoy, Gibbs, Rogers and Addington-Hall (2002) identified that since heart failure occurs in old age, mobility problems make attendance at hospital outpatients difficult. Many patients with chronic heart failure experience worsening symptoms for a relatively long time before they seek medical attention. Elderly patients tend to attribute symptoms of chronic heart failure to advancing age and decreasing physical and mental capacities and this reinforces their belief that nothing can be done to improve their symptoms (Gibbs, McCoy, Gibbs, Rogers & Addington-Hall, 2002). All these contribute to the presentation for medical attention when the patients have life threatening symptoms and this leads to readmissions. Thus, this study seeks to identify self-care practices concerning symptom management that subjects with chronic heart failure engage in and help the medical-surgical nurses to close the gaps that are identified in practice.

Recent research has shown that activity including exercise help people with heart failure to feel better, decrease symptoms and improve the heart's function (Heart failure Society of America, 2006; Robert & Bowling, 2001). In a study to determine self-care practices of heart failure patients by Schnell-Hoehn, Naimark and Tate (2007), it was discovered that 91% of the subjects were sedentary at the time of the interview. This is in line with Riegel and Dickson (2008) findings in which 82% of the subjects with chronic heart failure were not active and being inactive was attributed to fatigue.

Nicholls and Richards (2007) attributed activity intolerance to decreased cardiac reserve and altered peripheral responses. The Heart failure Society of America

(2006) suggested gardening, housework, biking, swimming and walking programs as activities/exercises that chronic heart failure patients can safely engage in. Heart failure Society of America (2006) further suggested that patients with heart failure should allow themselves rest periods during the day daily and should not wait until they are exhausted.

Zrinyi and Zekanyne (2007) said that the goal of activity in chronic heart failure is to accumulate at least 30 minutes of activity per day on most days of the week. Gardening and housework are less intense activities so they can be done for longer time. This is in line with Nicholls and Richards (2007) who suggested that patients with chronic heart failure should build up physical activity to 20-30 minutes a day to a point of slight breathlessness. Robert and Bowling (2001) discovered that patients who exercise or do activities have reduced number of readmissions and cardiac events and an improved quality of life.

Heart failure Society of America (2006) suggested that during activity chronic heart failure patients should watch for dyspnoea that prevents the patient from completing a sentence, dyspnoea that does not change if patient stops the activity, dizziness, chest pain or tightness, pain in arms, shoulders, neck and jaw, irregular pulse, extreme fatigue and excessive sweating. Nicholls and Richards (2007) said that activities should be slowed down, and if the symptoms do not change, the patient should consult a health care provider.

The studies by Riegel and Dickson (2008) and Schnell-Hoehn, Naimark and Tate (2007) show that most chronic heart failure patients are not active. This shows

that there is a self-care practice gap that needs the intervention of the medical surgical nurse. The extent to which rest and activity is valued by chronic heart failure patients in Zimbabwe seem not to have been documented. This study therefore sought to address this gap.

<p align="center">Theoretical framework</p>

Dorothea Orem's self-care model was used to guide this study. This theory has been used to guide many qualitative and quantitative studies that involve a wide range of populations (Fitzpatrik & Whall, 1996). Mahaka (2006) utilized Orem's theoretical model to examine the relationship between self-care knowledge on hypertension and hypertension control. It was noted that as hypertension self-care knowledge increased hypertension control among pregnant hypertensive women also increased.

Orem's theoretical model was used to examine self-care actions that older adults use to manage colds and influenza episodes (Conn, 1991). Self-care actions were defined as medication administration, fluids, food, elimination, activity and rest and social interaction. Medication administration was found to be the most common for colds (79%) and influenza (95%).

Maponga (2006) used Orem's self-care model to assess the relationship between eating and drinking patterns and frequency of oral thrush among subjects living with HIV and AIDS. The findings indicated that as eating and drinking patterns improved, frequency of oral thrush decreased. Therefore, good self-care practices would help decrease the number of readmissions among the patients with chronic

heart failure. Makhubela (2002) used Orem's self-care model to design the self-care model of best practice in home based care. Nutrition, personal hygiene, environmental hygiene, dealing with minor illnesses, spirituality, sexuality and recreation were derived from Orem's theory. The model proposed that self-care practices for prevention of diseases is maintained through nutrition, personal hygiene, environmental sanitation, dealing with minor ailments, interpersonal communication, rest and recreation, education, protection of family members, sexuality and spirituality. These variables are considered as environmental factors that are controlled by persons through practice of self-care to improve health and wellbeing.

In all these studies, the general premise is that Orem's self-care model is a tool for assessment and provision of comprehensive information pertaining to self-care of patients. Orem's self-care model was, therefore, applicable to guide this study which sought to examine the relationship between self-care practices and readmissions among adult patients with chronic heart failure.

Summary

Readmissions for chronic heart failure are costly (Owusu, 2007; Mostered & Hoes, 2007; National Health Service, 2008). The readmissions are related to poor self-care practices such as non adherence to recommended diet and medications, rest and activity and symptom management (Cline et al, 2000; Schiffer et al, 2007 & Bruggink et al, 2008; Riegel & Dickson, 2008). Reduced number of readmissions will mean reduced hospital expenditure as well as fewer or minimal disruptions in the patients' lifestyles. It reduces physiological, psychological and sociological stress on the patient

with chronic heart failure. Self-care practices among patients with chronic heart failure are embedded in a number of factors. Orem (1991) identified some of these factors as basic conditioning factors, which represent the human and environmental characteristics that affect the patient's ability to engage in actions that promote and maintain health and wellbeing. The literature has highlighted important areas of self-care practices in chronic heart failure that is, diet and medication, rest and activity and symptom management (Gary, 2006; Schiffer et al, 2007 & Bruggink et al, 2008).

Medical-surgical nurses play an important role in identifying and filling in gaps that exist in self-care practices to improve patients' wellbeing and hence reduce the number of readmissions among the chronic heart failure patients.

CHAPTER 3

RESEARCH METHODS

This chapter addresses methodology, which include the research design, sampling plan, sample size, sampling procedure, variables instruments, data collection plan, human rights considerations and data analysis. This study intended to examine the relationship between self-care practices among adults with chronic heart failure and readmissions.

Research Design

A research design is an overall plan of a scientific investigation consisting of strategies to be used for collecting and analyzing data (Polit & Hungler, 1999). A descriptive correlational study design was used for this study. A descriptive correlational study design describes a relationship between variables rather than to infer cause and effect relationships (Polit & Hungler, 1999). The investigator does not manipulate the independent variable. Such a research design allowed the investigator to identify self-care practices among adult subjects with chronic heart failure and the number of readmissions. This study design was also appropriate for examining the relationship between self-care practices and readmissions. The advantages of this study design according to Burns (2005) are that there is increased flexibility when investigating complex relationships among variables, there is potential for practical application in clinical settings, a framework for exploring relationships that are not manipulated and there is potential foundation for future experimental studies. It is an efficient method of collecting a large amount of data (Polit & Hungler, 1999).

However the disadvantages of a descriptive correlational design are that it is unable to manipulate the variable of interest, there is no randomization in sampling and it is unable to determine a causal relationship because of the lack of manipulation, control and randomization (Burns, 2005).

<div align="center">Sampling Plan</div>

Sampling is the process of selecting a portion so as to acquire knowledge of a phenomenon that is present in the entire population (Burns & Grove, 1997; Polit & Hungler, 1999). A sample is a portion of the population that represents the entire population. A sampling plan is developed to increase representativeness, decrease systematic bias and sampling error which is, the differences between the population and sample parameters (Burns & Grove, 1997). The target population was all chronic heart failure patients aged 40-80 years. Accessible population was all chronic heart failure patients aged 40-80 years who are on treatment attending the outpatients review clinic at one of the central hospitals in Zimbabwe.

The sampling plan used in this study was the probability sampling method. This method ensures that every member of the population has a probability higher than zero of being selected into the sample (Burns & Grove, 1997). Probability was achieved though random sampling. The chronic heart failure patients were seen on Mondays, Tuesdays, Thursdays and Fridays in the medical clinics and on Wednesday in the cardiac clinic.

According to Polit and Hungler (1999), simple random sampling is the most basic of the probability sampling designs. Simple random sampling was used because

inferential statistics are based on the assumption that the sample from which data would be derived will have been obtained randomly (Burns & Grove, 1997). There was less opportunity for a systematic bias if study participants were selected randomly although it is possible for a systematic bias to occur by chance (Burns & Grove, 1997).

<div align="center">Study site</div>

Subjects with chronic heart failure were selected from the review clinics at Parirenyatwa Group of hospitals at the Outpatients' Department. These clinics represented a more accessible population to the investigator because of the number of attendance of the subjects with chronic heart failure. The review clinic offers various services such as medical management of chronic heart failure, medical-surgical nursing services such as health education on adherence to medications and diet, symptom management, rest and activity that need to be followed by a patient with chronic heart failure. Subjects who attended the clinics had other medical conditions and cardiovascular conditions including diagnosed heart failure, thus the site was appropriate for the study.

A feasibility study revealed that patients were seen on Monday to Friday and an average of 40 subjects with chronic heart failure would be attended per week if the clinics were fully functional. During the data collection period the investigator visited the clinics everyday for five weeks.

<div align="center">Sampling Criteria</div>

Sampling criteria list the most important characteristics of the target population (Burns & Grove, 1997). It is the inclusion and exclusion criteria. Inclusion criteria

include the essential characteristics of the population so that homogeneity and control of extraneous variables is achieved (Polit & Hungler, 1995). Inclusion criteria provide a guideline for recruiting the study subjects. The inclusion criteria for this study was adults both males and females who were 40-80 years with documented chronic heart failure existing for at least 3 years, attending the review clinic. This age group ensured that the age group in which chronic heart failure is common was not omitted. The subjects were Shona and/or English speaking people to be eligible for the study. The subjects were on digoxin and frusemide so that it was applicable to examine their practices on these medications.

The exclusion criteria refer to excluding characteristics that are undesirable. This is done to control extraneous variables that would influence the dependent variable (Burns & Grove, 1997). For this study, exclusion criteria were patients below the age of 40 years and those above 80 years as well as those who could not speak Shona or English. Patients with other non-cardiac conditions such as renal failure, diabetes mellitus, HIV/AIDS were excluded because these increase readmission rates. Critically ill patients were also excluded, as they might not have been able to give responses that they would otherwise give if they were at their maximum potential.

<u>Sample size</u>

Sample size is determined through power analysis, significance level and the effect size (Burns & Grove, 1999; Polit & Hungler, 1995). Power is defined as the ability of the research design to detect relationships that actually exists in the population (Burns & Grove, 1999). Power controls the likelihood of making a type 11

error, which arises when the researcher accepts a null hypothesis, which should be rejected. The larger the sample the more representative it is and the smaller the sampling error (Polit & Hungler, 1995). In this study, the power of 0,80 was used because that is the acceptable power in nursing research according to Cohen (1988).

Significance level signifies the probability a type 1 error, which means rejecting the null hypothesis when it is true (Polit & Hungler, 1995). In this study, the level of significance used was 0,05. This means that the results would be correct 95% of the times out of the hundred if the study is replicated. Effect size is an estimate of the magnitude of the relationship between the research variables. According to Polit and Hungler (1995) majority of nursing studies cannot expect an effect size in excess of 0,5. This study used a medium effect of 0,5

A sample size of 65 was used based on the power analysis of alpha 0,05 power of 0,8 and an effect size of 0,5 (Lipsey, 1990). This sample was sufficient to find out the relationship between self-care practices and readmissions among adult subjects with chronic heart failure. Fifteen more study participants were supposed to be added to cater for attrition to make the sample size 80 but this was not possible because there were a few patients who met the inclusion criteria. Majority of the patients had other conditions that made them be excluded from the study.

Sampling Procedure

The sampling method used was simple random sampling, which is a type of probability sampling. The patients coming for their reviews had their outpatients notes

arranged on a trolley and the nurses running the clinic would call the patients who were sitting on benches into the consultation rooms on a first come first serve basis. The investigator screened the patients for eligibility by referring to the patients' notes. All male and female patients with documented diagnosis of chronic heart failure between the ages of 40 to 80 years on digoxin and frusemide were selected. The notes were numbered consecutively form one up to the last number depending on the study participants available that day. A table of random numbers was used and a finger was put blindly on the table of numbers and the patient whose notes number corresponded with the number pointed at on the table of random numbers was selected into the sample. The procedure of moving the finger up, down, right and left on the table of random numbers was repeated for every subject to be selected into the sample. The whole procedure was done on daily basis until the sample of 65 was reached. This procedure has an advantage of providing an equal chance of selection to every subject and hence ensures representativeness of the sample to the target population.

<div align="center">Variables</div>

<div align="center">Conceptual and Operational Definitions</div>

The variables in this study were readmissions as the dependent variable and self-care practices as the independent variable.

Readmissions

Readmissions was conceptually defined as the number of episodes that a chronic heart failure patient comes back into hospital for treatment and close monitoring for cardiac symptoms.

Operationally, readmissions was measured by readmission interview schedule (RIS) which addressed the number of episodes an individual comes back into hospital for treatment and close monitoring for cardiac symptoms in the past two years.

<u>Chronic Heart Failure Self-care Practices</u>

Chronic heart failure self-care practices was conceptually defined as a range of activities that individuals perform to prevent disease, promote wellbeing or meet basic health needs in their environments these included medication, diet and rest and activity or exercise as well as symptom management (Makhubela, 2002). Operationally, chronic heart failure self-care practices was measured by chronic heart failure self-care practices interview schedule (CHFSCPIS) which included adherence to recommended diet medications, symptom management and rest and activity/exercise.

<u>Demographic variables</u>

Demographic variables were conceptualized as personal characteristics such as age, sex, marital status, education, religion, occupation, total monthly income, total monthly expenditure on managing chronic heart failure, place of residence, smoking and drinking habits, duration of illness and source of supply of drugs.

Research Instruments

An instrument is the formal document used to collect and record information (Polit & Hungler, 1995). This study used an interview schedule, which could be used with the blind, elderly or illiterate individuals. The investigator developed a structured interview schedule based on literature. It comprised of closed-ended questions. There

was room for clarification and order of questions was strictly adhered to, to avoid bias. The closed-ended questions were used because the data obtained was easy to analyze (Polit & Hungler, 1995). The instrument comprised of three sections namely, the Demographic information, Readmissions and Self-care Practices sections. The instrument was translated into vernacular language by the investigator.

<div align="center">Readmissions</div>

Readmissions section (See Section 11) consisted of one item. Readmissions were measured by the number of times the subject was admitted in hospital with chronic heart failure in the past two years ranging from 2007 to 2009. Available literature indicated that, studies on readmissions ranged from 0 to 6 times in two years (Nyamakura, 1999 & Owusu, 2007). In this study, the investigator relied on the subjects' recall on the number of readmissions. Medical records on subjects' review cards were also used to confirm the information given by the subjects. A scoring of 0-5 was given for the responses. Zero point was given to those who were never admitted, one point for being admitted once, two points for being admitted two times, three points for being admitted three times and four points for being readmitted four times and five points for those who were admitted more than four times. The total score for readmissions was 5. The lowest score meant no readmission and the highest score meant high number of readmissions.

<div align="center">Chronic Heart Failure Self-care Practices</div>

The interview schedule measured the self-care practices of the adult patients with chronic heart failure. The Chronic Heart Failure Self-care Practice questionnaire

comprised of 19 items to find out what the chronic heart failure patients do to maintain health and wellbeing. The first item sought to find out if the subjects could identify or if they were taking their drugs for managing the cardiac symptoms. One point was given for taking or identifying one of the two drugs and two points was given for identifying the two drugs or taking the two drugs and a zero for failure to identify the drugs being taken.

Item 2 sought to find out how often the subjects ensured enough supply of medications for daily use. Three points were awarded to subjects who always ensured that they had enough supply of medications, two points when they ensured enough supply most of the time, one point if they rarely ensured that they had enough supply of medications and no point if they never ensured that they had enough medications. Item 3 sought to find out how many times the subjects had missed their daily doses. Three points were awarded to those who had never missed their daily doses, two points for those who had missed once, one point for those who had missed two times and no point for those who had missed their daily doses three times or more in the last month.

Item 4 sought to find out how often the subjects came to hospital as scheduled. Three points was awarded to those who always kept their scheduled appointments, two points for those who kept the scheduled appointments most of the time, one point for those who rarely kept their appointments and no points were given to those who never kept their scheduled appointments. Item 5 sought to find out if the subjects' monthly income was enough to buy drugs, pay for transport to hospital and other medical

expenses. Three points was awarded if money was always enough, two points if money was enough most of the time, one point if money was rarely enough and no point if the monthly income was never enough. Item 6 sought to find out how often the subjects followed special instructions when taking drugs. Three points were awarded to those who always followed the instructions, two points to those who followed instructions most of the time, one point to those who followed instructions once in a while and no point for those who never followed the instructions.

Item 7 sought to find out how often subjects took potassium supplements or foods rich in potassium when they were on frusemide. Three points were given to those who always took potassium supplements or foods rich in potassium, two points to those who took the supplements most of the time, one point to those who took supplements once in a while and no point for those who did not take any supplements or any foods rich in potassium. Item 8 sought to find out the extent to which daily plans and social outings interfered with the taking of the medications. A scoring of 0-3 was given to this item. No point was awarded for interference of the daily plans with taking of drugs to a greater extent, one point for moderate extent, two points for little extent and three points for no interference.

Item 9 sought to find out if the patients used medication organizers to remind them to take their medications. A scoring of 0-3 was given. No point was given to those who never used the medication organizer, one point to those who use it once in a while, two points to those who used it most of the time and three points to those who used it always. Item 10 sought to find out how often the subjects ate salty foods. A

scoring of 0-3 was given to this item. Zero points were given to those who always took salty foods, two points to those who took salty foods once in a while and three points to those who never took salty foods. Item 11 asked about how often subjects added salt at the table. Three points were given to those who never added salt to their relish at the table, two points to those who added salt once in a while, one point to those who added salt most of the time and no point to those who always add salt to their relish at the table.

Item 12 sought to find out how often subjects checked the labels of processed foods, and drugs to ascertain sodium content. A scoring of 0-3 was given to this item. No point was given to those who never checked the labels, one point to those who checked labels once in a while, two points to those who checked the labels most of the time and three points to those who always checked the labels. Item 13 sought to find out how often subjects checked any weight gain. No point was given to those who never checked; one point was given to those who checked one day a week, two points to those who checked two days a week, three points to those who checked three days a week, four points to those who checked weight gain four days a week, five points to those who checked five days a week, six points for those who checked six days a week and seven points to those who check their weight daily.

Item 14 sought to find out if subjects could identify signs and symptoms of heart failure they had experienced. A scoring of 1-8 was given to this item. Each correct response was worth one point. Item 15 addressed subjects' consultation behaviours. A scoring of 0-3 was given to this item. Those who always consulted a

health care provider immediately for prompt treatment of symptoms such as chest pains and palpitations failing to resolve were awarded three points, two points to those who consulted most of the time, one point to those who consulted immediately once in a while and no point to those who consulted when the signs and symptoms became life threatening.

Item 16 sought to find out how often subjects exercised or engaged in activities such as gardening, walking, swimming housework and farming. Each activity was scored. Three points was awarded to those who engaged in any of the activities at least three times a week, two points for those who engaged in an activity two times a week, one point to those who engaged in an activity once a week and no point for those who never engaged in any activity. Item 17 sought to find out what would make subjects stop exercising or any of the activities. A score of 1-6 was given to this item. One point was given for any correct response such as dizziness, lightheadedness and shortness of breath that prevented completion of a sentence. Item 18 elicited how often the subjects gave themselves time to rest during the day. A score of 0-7 was given to this item. Zero points was given to those who never gave themselves time to rest during the day, one point was given to subjects who rested during the day once a week, two points to those who rested two days a week, three points to those who rested three days a week, four points to those who rested four days a week, five points to those who rested five days a week, six points to subjects who rested six days a week and seven points were given to those who gave themselves time to rest during the day

daily. Item 19 sought to find out the barriers to following recommended medications and diet, symptom management and rest and activity/exercise. This was not scored.

The total scoring for self-care practices questionnaire was 93. A higher score meant that one had good self-care practices and a lower score meant poor self-care practices. Those with a score above 46,5 had good self-care practices and those with a score below 46,5 had poor self-care practices.

Validity is the degree to which an instrument measures what it is supposed to measure (Polit & Hungler, 1995). Subjecting the construction of the instrument to scrutiny ensured validity. The instrument was also critiqued by experts consisting of physicians and nurses from the study sites and from the Department of Nursing Science. The investigator also carried out a pilot study to ensure content validity and reliability.

Reliability is the degree of consistency with which an instrument measures what it is supposed to measure (Burns & Grove, 1997). The pilot study helped in perfecting the instrument and enhanced reliability (Polit & Hungler, 1995). Corrections that were done as a result of the pilot study were incorporated. The question to establish how often the subjects weighed themselves was modified to how often the subjects checked weight gain after realizing that almost all the subjects had no scales. A pilot study made the investigator familiarize with the questions as well as tested cultural relevancy of the contents of the interview schedule. The pilot study was administered to 5 subjects who met the inclusion criteria at Parirenyatwa Group of Hospitals.

Data Collection Plan

Data collection plan is a precise systematic gathering of information that is specific to the study being conducted (Burns & Grove, 1997). It also shows how the study will be implemented, how data will be analyzed, how findings will be examined, interpreted and disseminated (Burns & Grove, 1997; Polit & Hungler, 1995). Data was collected from adult patients aged between 40 to 80 years in the medical and cardiology clinic at the outpatients' department at Parirenyatwa Group of Hospital. Interviews were done early in the morning before patients were seen by doctors. When a patient who met the inclusion criteria was identified, he or she was taken to a private room. The purpose of the study was explained to the subjects and the subjects were asked for their consent. A verbal and a written consent were used for the protection of subjects' rights. The potential risks and benefits for the study were explained to the subjects. The subjects were interviewed face-to-face and the responses were recorded. The interview lasted for about 20 minutes.

Human Rights Considerations

Permission to do the study was sought from the Medical Research Council of Zimbabwe and the Joint Research Ethics Committee, ethical review boards for the protection of human subjects in the study. The research committee in the Department of Nursing Science also reviewed the research proposal to reduce study risks to the subjects in the study. Permission to do the study at Parirenyatwa Group of Hospitals

was sought from the Clinical Director and the Outpatients Department matron and sister-in-charge to be allowed access to the study sites.

The participation in the study by the subjects was voluntary. The subjects made the decision to participate after information was given. There was no coercion or any undue influence. The purpose and nature of the study, the format of the interview, waiting time, risks and benefits was explained to the subjects prior to the interview. According to (Burns & Grove, 1997) confidentiality must be observed when carrying out a study. In this study, the investigator ensured confidentiality and anonymity through using numbers instead of names on the interview schedule. Uniformity of the information was ensured by using the same interview schedule in the same format for all the subjects. The information collected was kept under lock and key and the keys were kept by the investigator to ensure confidentiality.

Data Collection Procedure

Data refers to the pieces of information obtained in the course of a study (Polit & Hungler, 1999). Data was collected by a structured interview schedule. The study setting was the Outpatients' Department at Parirenyatwa Group of Hospitals. The interviews were carried out in a private room at the Outpatients' Department. Patients coming to the Outpatients' Department first reported to the nursing staff after paying the consultation fees. The nurses collected the patients' outpatient cards and arrange them on a trolley. The investigator would establish the number of patients who would have come on that particular day by counting the files. The investigator would choose

study participants who met the inclusion criteria by reading through the cards. Simple random sampling as explained earlier would then be done to select the study participants.

The investigator would start by giving a brief introduction of self and also the purpose of the study to all the study participants. After the explanation detailed above, permission to interview a study participant would be sought from the study participant. If they agreed they were asked to sign a consent form. Each interview lasted approximately 20 minutes. The interviews were conducted daily from Monday to Friday for five weeks from the 16th of March to the 17th of April 2009 about 3 study participants were interviewed per day. Data collection was done from 7am to 11am. A codebook was devised by the investigator to serve as convenient documentation, a way of ensuring confidentiality and for use in data analysis.

Data Analysis

According to Burns and Grove (1997) the process of data analysis is conducted to reduce, organize and give meaning to the data. The research objectives and questions determined the analysis techniques. In this study, data was entered into a computer and was analyzed using the Statistical Package for Social Sciences (SPSS) and the Microsoft Excel program. A plan for entering data into the computer was developed in a codebook, which was developed by the investigator.

Demographic variables were describing the sample under study. In this study these were age, gender, marital status, level of education, religion, occupation, monthly income, monthly expenditure on treatment regiments, place of residence, social habits, duration of chronic heart failure and usual sources of drugs. Age was analyzed using descriptive statistics and was presented in terms of mean, mode, median, range frequencies and percentages of the study participants. All the other demographic variables were analyzed using frequencies and percentages.

Readmissions Among Chronic Heart Failure Patients

Research Question:

'What is the number of readmissions among adults aged 40-80 years with chronic heart failure?'

Descriptive statistics was used to determine the mean, frequencies and percentages to describe the sample's number of readmissions.

Self-care Practices among Chronic Heart Failure Patients

Research Question:

'What are the self-care practices of adults aged 40-80 years with chronic heart failure?'

The question served to identify the self-care practices that patients with chronic heart failure engaged in to maintain health and wellbeing attending the outpatients' clinics at one of the referral central hospital in Zimbabwe. Descriptive analyses

(frequencies and percentages) were conducted to determine the self-care practices of subjects with chronic heart failure.

<u>The Relationship Between Self-care practices And Readmissions</u>

Research Question:

"What is the relationship between self-care practices and readmissions among adults aged 40-80 years with chronic heart failure?"

Pearson's product moment correlation test was used to examine whether there is a relationship between the independent variable, self-care practices and the dependent variable, readmissions among subjects with chronic heart failure. A significance level of 0.05 was used. The type (positive or negative) and the strength of the relationship were determined. A simple regression analysis was also performed to demonstrate the effect of self-care practices on readmissions.

Chapter 4

Results

Introduction

The purpose of this study was to determine the relationship between self-care practices and readmissions among adults aged 40 to 80 years with chronic heart failure. A random sample of 65 was selected. Data was collected using a face-to-face interview. A structured interview schedule was used. The subjects were patients who visited the outpatients department at one of the central hospital in Harare, Zimbabwe. This study sought to answer the following questions.

1.   What are the self-care practices of adults aged 40 to 80 years with chronic heart failure?

2.   What is the number of readmissions among adults aged 40 to 80 years with chronic heart failure?

3.   What is the relationship between self-care practices and readmissions among adults aged 40 to 80 years with chronic heart failure?

The data was analyzed using Statistical Package of Social Sciences (SPSS). Descriptive and inferential statistics were used to analyze the data. Pearson coefficient correlation was used to determine the relationship between self-care practices and readmissions among adults aged 40 to 80 years with chronic heart failure. Regression analysis was used to examine the strength of the relationship between self-care practices (independent variable) and readmissions (dependent variable) in chronic heart failure.

Sample Demographics

Descriptive statistics were used to describe the characteristics of age, gender, marital status, level of education, religion, occupation, monthly income, and expenditure on medical expenses, place of residence social habits and source of drugs and duration of chronic heart failure. Tables 1 to 3 illustrate demographic characteristics of the respondents. Table 1 shows age, gender, marital status, level of education and religion. The age range was 40 to 80 years with a mean age of 56 years, median age 56 years and modal age of 40 years. The age range was 40. Twenty-seven respondents (41.5%) were between 40 to 50 years, twelve respondents (18.5%) were between 51 to 60 years, thirteen respondents (20%) were between 61 to 70 years and thirteen respondents (20%) were between 71 to 80 years.

Forty-two respondents (64.6%) were females and twenty-three (35.4%) were males. Forty-six respondents (70.8%) were married, one respondent (1.5%) was single, fourteen (21.5%) were widowed and four (6.2%) were divorced. None of the respondents were separated. Fifty-seven (87.7%) were Christians and eight respondents (12.3%) were traditionalists. Five (7.7%) of the respondents had informal education, twenty-six (40%) respondents were educated up to primary level, thirty-one (47.7%) were educated up to secondary level and three respondents (4.6%) were educated up to tertiary level.

Table 2 shows results of the respondents' employment status, monthly incomes and monthly expenses. Forty-seven (72.4%) of the respondents were not employed, 11 (16.9%) were self-employed, 1(1.5%) respondent was a skilled worker, 3(4.6%) were

professionals and 3 respondents (4.6%) were retired. Forty-eight (73.9%) respondents had a monthly income of less than $50 (American Dollars), 5(7.7%) respondents had a monthly income of between $51 and $150, 9 (13.8%) had a monthly income between $151 and $250, 2 (3.1%) had a monthly income between $251 and $350 and 1 (1.5%) had a monthly income of above $450.

Twenty-three respondents (35.4%) had a total monthly expenditure on drugs transport and other medical expenses of below $20 (American Dollars), 25 (38.5%) respondents had a total expenditure of between $21 and $40, 10 (15.4%) had a monthly expenditure of between $41 and $60, 6 (9.2%) had a monthly expenditure of between $61 and $80 and 1 (1.5%) had a monthly expenditure of above $100.

Table 3 shows results of residential areas, social habits, duration of illness and sources of drugs. Fourteen respondents (21.5%) lived in rural areas, 1(1.5%) lived in a farming area, 4(6.2%) lived in the urban areas in the low-density suburbs and 46(70.8%) lived in the urban area in the high-density suburbs. Sixty-five (100%) respondents did not take alcohol or smoke cigarettes. Disease duration ranged from 3 years to 10 years. Thirty-six (55.4%) respondents had been suffering from chronic heart failure for three years, 12(18.5%) for four years, 6(9.2%) for five years, 5(7.7%) for six years, 2(3.1%) for seven years, 3(4.6%) for eight years and 1(1.5%) had the disease for ten years. Fifty-two respondents (80%) got their drugs from the hospital pharmacies, 12(18.5%) got their drugs from private pharmacies and 1(1.5%) got drugs from the local clinic.

Table 1

Sample Demographic Data I

(N = 65)

Variable	Frequency	Percentage
Age		
40-50 years	27	41.5
51-60 years	12	18.5
61-70 years	13	20
71-80 years	13	20
Gender		
Female	42	64.6
Male	23	35.4
Marital Status		
Married	46	70.8
Single	1	1.5
Widowed	14	21.5
Divorced	4	6.2
Level of Education		
No formal education	5	7.7
Primary	26	40.0
Secondary	31	47.7
Tertiary	3	4.6
Religion		
Christianity	57	87.7
Traditional	8	12.3
Moslem	0	0.0

Table 2

Sample Demographics II

(N = 65)

Variable	Frequency	Percentage
Occupation		
Unemployed	47	72.4
Self employed	11	16.9
Unskilled worker	0	0.0
Skilled worker	1	1.5
Professional	3	4.6
Retired	3	4.6
Monthly Income (American Dollars)		
Below $50	48	73.9
$51 - $150	5	7.7
$151 - $250	9	13.8
$251 – $350	2	3.1
$351 - $450	0	0.0
Above $450	1	1.5
Monthly expenses (American Dollars)		
Below $20	24	35.4
$21 - $40	25	38.5
$41 - $60	10	15.4
$61 - $80	6	9.2
$81 - $100	0	0.0
Above $100	1	1.5

Table 3

Sample Demographics III

(N = 65)

Variable	Frequency	Percentage
Residential area		
Rural	14	21.5
Farms A1	1	1.5
Farms A2	0	0.0
Urban Low Density	4	6.2
Urban High Density	46	70.8
Smoking		
Yes	0	0.0
No	65	100.0
Alcohol		
Yes	0	0.0
No	65	100.0
Duration of Chronic Failure(years)		
3	36	55.4
4	12	18.5
5	6	9.2
6	5	7.7
7	2	3.1
8	3	4.6
10	1	1.5
Source of Drugs		
Hospital Pharmacies	52	80
Private Pharmacies	12	18.5
Local Clinics	1	1.5

Readmissions

Table 4 shows frequency of readmissions. Number of readmissions in this study sample ranged from 0 to above four times. Twenty-one respondents (32.3%) reported no readmissions in the past 2 years. Twenty respondents (30.8%) reported being readmitted once, sixteen respondents (24.6%) reported 2 readmissions, four (6.2%) respondents reported 3 readmissions, three (4.6%) reported 4 readmissions and only one respondent (1.5%) reported more than 4 readmissions in the period 2007 to 2009. the mean number of readmissions was 1.25. Readmission scores were awarded for the number of times the respondents were readmitted for chronic heart failure. Twenty-one respondents (32.3%) had 0 points, 20(30.8%) respondents had 1 point, 16(24.6%) had 2 points, 4(6.2%) had 3 points, 3(4.6%) had 4 points and 1(1.5%) had 5 points. Highest points meant highest number of readmissions and lowest points meant lowest number of readmissions.

Chronic Heart Failure Self-care Practices

Table 5 shows results of drugs they were taking, how often they ensure enough supply, if they are adhering to the low salt diet. Nine respondents (13.8%) had digoxin and frusemide prescribed but they were not taking any of the drugs, 4(6.2%) were taking frusemide only and 52(80%) were taking digoxin and furosemide. Twelve respondents (18.5%) always ensured that they had enough supply of medication for daily use. Sixteen (24.6%) ensured enough supply of medication most of the time and 37(56.9%) ensured enough supply of medication once in a while. Sixteen respondents (24.6%) had missed their doses three or more times in the past month,10(15.4%)

respondents had missed their doses two times, 23 respondents (35.4%) had missed their doses once and16(24.6%) reported that they had never missed their daily doses of medications in the past month. Regarding keeping of scheduled appointments, 15(23.1%) respondents never kept the scheduled appointment, 16(24.6%) respondents kept the appointment once in a while, 15(23.1%) respondents reported that they kept the appointments most of the time and 19(29.2%) reported that they always keep scheduled appointments to been seen by doctors get prescriptions and buy drugs.

Table 6 shows that 27(41.6%) respondents reported that their monthly income is never enough to pay for drugs, transport and other medical expenses, 11(16.9%) respondents reported that the income is rarely enough, 19(29.2%) respondents reported that their income is enough to pay for drugs, transport and other medical expenses most of the time and 8(12.3%) respondents reported that their monthly income is always enough to pay for their drugs, transport and other medical expenses.

Regarding following instructions when taking drugs, 8(12.3%) respondents never followed the instructions, 2(3.1%) rarely followed the instructions, 28(43.1%) respondents followed the instructions most of the time and 27(41.5%) always followed the instruction when taking medications. Twenty-four (36.9%) respondents took supplements or food rich in potassium when on diuretics once in a while, 31(47.7%) took potassium rich foods most of the time and 10(15.4%) respondents reported taking the potassium supplements or potassium rich foods always. Fifteen (23.1%) respondents reported great interference, 22(33.8%) respondents reported moderate interference, 17(26.2%) reported little interference and 11(16.9%) reported that daily plans and social outing had no interference on their medication taking.

Table 4

Readmissions

(N = 65)

Variable	Frequency	Percentage
Readmissions in the past 2 years		
None	21	32.3
Readmitted once	20	30.8
Readmitted twice	16	24.6
Readmitted thrice	4	6.2
Readmitted four times	3	4.6
Readmitted more than four times	1	1.5
Readmissions scores(out of 5)		
o	21	32.3
1	20	30.8
2	16	24.6
3	4	6.2
4	3	4.6
5	1	1.5

Table 5

Chronic Heart Failure Self-care Practices (1) (N = 65)

Variable	Frequency	Percentage
Drugs being taken		
Not taking/don't know	9	13.8
Frusemide	4	6.2
Digoxin	0	0.0
Frusemide & Digoxin	52	80.0
Ensure enough supply		
Always	12	18.5
Most of the time	16	24.6
Once in a while	37	56.9
Never	0	0.0
Missed doses in the past month		
Never	16	24.6
1	23	35.4
2	10	15.4
≥3	11	24.6
Frequency of Keeping Scheduled Appointments		
Always	19	29.2
Most of the time	15	23.1
Rarely	16	24.6
Never	15	23.1

Table 6

Chronic Heart Failure Self-care Practices (2) (N = 65)

Variable	Frequency	Percentage
Adequacy of Monthly Income		
Always	8	12.3
Most of the time	19	29.2
Rarely	11	16.9
Never	27	41.6
Frequency of following Instructions		
Always	27	41.5
Most of the time	28	43.1
Rarely	2	3.1
Never	8	12.3
Frequency of taking Potassium supplements		
Always	10	15.4
Most of the time	31	47.7
Rarely	24	36.9
Never	0	0.0
Event of Interference of Daily Plans and Social Outings on Daily Plans		
No interference	11	16.9
To a little extent	17	26.2
To a moderate extent	22	33.8
To a greater extent	15	23.1

Table 7 shows that 63(96.9%) respondents had never used a medication organizer or anything to remind them to take their medications. One respondent (1.5%) reported to have used a medication organizer once a while and one (1.5%) responded reported to have used a medication organizer most of the time.

Six respondents (9.2%) reported that they always eat salty foods, five (8%) respondents reported that they eat salty foods most of the time, twenty-two (33.8%) reported that they eat salty foods once in a while and thirty-two respondents (49.2%) reported that they never eat salty foods. Regarding adding salt to relish at the table 4(6.2%) respondents always added salt at the table, eight respondents (12.3%) added salt most of time, six respondents (9.2%) reported that they added salt at the table once in a while and 47(72.3%) reported that they never add salt to relish at the table.

Regarding checking labels of processed foods and drugs to ascertain sodium content, forty-eight respondents (73.8%) never checked, twelve respondents (18.5%) checked once in a while, three (4.6%) checked most of the time and two (3.1%) reported that they always check the labels of medications and processed foods to ascertain sodium content.

Table 8 shows results of weighing and identification of symptoms associated with heart failure. Twenty-nine respondents (44.6%) never checked any weight gain, 13(20%) respondents and 13(20%) checked for any weight gain once and twice a week respectively, 7(10.8%) respondents checked their weight three times a week, 2(3.1%) checked four times a week and 1(1.5%) respondent checked for any weight gain daily. Regarding identification of symptoms of chronic heart failure, 65(100%)

respondents identified dyspnoea, 59(90.8%) identified fatigue, 53(81.5%) respondents identified oedema, 19(29.2%) respondents identified new cough, 34(52.3%) respondents identified palpitations, 7(10.8%) identified nocturia, 49(75.4%) identified chest pain and 5(7.7%) respondents identified weight gain as symptoms that occur as a result of chronic heart failure.

Table 9 shows that, 35(53.8%) respondents reported that they will never seek the help of a health care provider for weight gain of more than 2kg per week until the symptom is life threatening. Seventeen respondents (26.2%) reported that they rarely seek help for weight gain, 6(9.2%) reported that they seek help most of the time and 7(10.8%) reported that they would always seek the help of a health care provider for prompt treatment of weight gain per week is 2 kg or more.

All respondents 65(100%) would seek help from a health care provider for prompt treatment if they experience chest pain with 8(12.3%) respondents seeking help most of the time and 57(87.7%) respondents seeking help from the health care provider always for prompt treatment. Thirty-six respondents (55.4%) reported that they would never seek help from a health care provider for palpitations for prompt treatment until the symptom is life threatening, 20(30.8%) respondents would seek help once in a while for palpitations 6(9.2%) respondents would help most of the time and 3(4.6%) respondents reported that they would always seek help for prompt treatment by a health care provider if palpitations fail to resolve. Forty-seven respondents (72.3%) would always seek help from a health care provider for prompt treatment if dyspnoea fail to resolve. Sixteen respondents (24.6%) would seek help

most of the time for dyspnoea, and 2(3.1%) respondents would rarely seek for help for prompt treatment when they experience dyspnoea.

Regarding worsening fatigue that is failing to resolve, twenty respondents (30.8%) reported that they would never seek the help of a health care provider for prompt treatment until the symptom is life threatening. Thirty-six respondents (55.4%) would rarely seek help for prompt treatment, 8(12.3%) would seek help most of the time and only 1(1.5%) respondent would always seek help of a health care provider for prompt treatment if fatigue fail to resolve.

Table 10 shows results of activities which respondents engaged in and how frequent. Ten respondents (15.4%) reported that they would work in the garden once a week, 3(4.6%) respondents would do gardening twice a week and 30(46.2%) respondents would do gardening 3 or more times a week. Twenty-two (33.8%) never worked in the garden. Sixty-five respondents (100%) reported that they took a walk 3 or more times a week. Two respondents (3.1%) reported that they did swimming once a week and 2(3.1%) respondents reported that they did swimming three or more times a week and 61(93.8%) respondents never engaged in swimming. Three respondents (4.6%) reported that they did housework once a week, 3(4.6%) did housework two times a week and thirty-four (52.3%) reported that they would do house work three or more times a week. Twenty-five (38.5%) were never involved in housework.

Regarding farming 13(20%) respondents reported that they were involved in farming once a week, two respondents (3.1%) did farming twice a week and 2(3.1%)

respondents did farming three or more times a week. Forty-eight (73.8%) subjects never engaged in farming activities.

Table 11 shows what makes respondents stop activities and exercise, 58(89.3%) respondents reported shortness of breath that prevents completion of a sentence, 10(15.4%) reported that they would stop activities/exercise when experiencing dizziness, 34(52.3%) respondents reported chest pain, 7(10.8%) reported irregular pulse and 63(96.9%) reported fatigue as sign that would make them stop exercising. None of the respondents reported severe sweating as a sign that would make them stop activities/exercising

Regarding how respondents rested during the day per week, three respondents (4.6%) rested two days a week, 17(26.2%) respondents rested three days a week, 20(30.8%) respondents rested four days a week, 14(21.5%) rested five days a week, 3(4.6%) respondents rested six days a week and 8(12.3%) respondents reported that they would rest during the day seven days a week.

Table 12 shows barriers to following treatment plan. Four (6.2%) respondents cited lack of knowledge as a barrier to following treatment plan, 5(7.7%) respondents reported forgetfulness, and 42 (64.6%) respondents reported that they would have trouble going away from home when taking diuretics. Twenty-one (32.3%) respondents reported waking up at night to go to the toilet, 9(13.8%) cited lack of energy, 3(4.6%) reported inability to cook, 40(61.5%) respondents reported scarcity of recommended foods and drugs and 40(61.5%) respondents reported too expensive drugs as barriers to following recommended treatment plan. Twelve respondents (18.5%) reported that craving for salty foods, 15(23.1%) reported mobility problems and distance from the health care facility and 3 respondents(4.6%) reported feeling depressed and over whelmed as barriers to following the recommended treatment plan.

Table 7

Chronic Heart Failure Self-care Practices (3) (N = 65)

Variable	Frequency	Percentage
Frequency of using a medication organizer		
Always	0	0.0
Most of the time	1	1.5
Rarely	1	1.5
Never	63	97.0
Frequency of Taking Processed and/or Salty Foods		
Always	6	9.2
Most of the time	5	8.0
Rarely	22	33.8
Never	32	49.2
Frequency of adding Salt at the Table		
Always	4	6.2
Most of the time	8	12.3
Rarely	6	9.2
Never	47	72.3
Frequency of Checking Labels of Foods and Drugs		
Always	2	3.1
Most of the time	3	4.6
Rarely	12	18.5
Never	48	73.8

Table 8

Chronic Heart Failure Self-care Practices (4) (N = 65)

Variable	Frequency	Percentage
Frequency of Checking Weight Gain		
Daily	1	1.5
Six days a week	0	0.0
Five days a week	0	0.0
Four days a week	2	3.1
Three days a week	7	10.8
Two days a week	13	20.0
Once a week	13	20.0
Never	29	44.6
Identification of signs and symptoms for Chronic		
Heart Failure		
Dyspnoea	65	100.0
Fatigue	59	90.8
Oedema	53	81.5
New cough	19	29.2
Palpitations	34	52.3
Nocturia	7	10.8
Chest pains	49	75.4
Weight gain	5	7.7

Table 9

Chronic Heart Failure Self-care Practices (5) (N = 65)

Variable	Frequency	Percentage
Weight gain of more than 2kg per week		
Always	7	10.8
Most of the time	6	9.2
Rarely	17	26.2
Never until symptoms are life threatening	35	53.8
Chest pains		
Always	57	87.7
Most of the time	8	12.3
Rarely	0	0.0
Never until symptoms are life threatening	0	0.0
Palpitations		
Always	3	4.6
Most of the time	6	9.2
Rarely	20	30.8
Never until symptoms are life threatening	36	55.4
Dyspnoea		
Always	47	72.3
Most of the time	16	24.6
Rarely	2	3.1
Never until symptoms are life threatening	0	0.0
Worsening Fatigue		
Always	1	1.5
Most of the time	8	12.3
Rarely	36	55.4
Never until symptoms are life threatening	20	30.8

Table 10

Chronic Heart Failure Self-care Practices (6) (N = 65)

Variable	Frequency	Percentage
Frequency of doing activities/exercise		
Gardening		
More than 3 times per week	30	46.2
2 times per week	3	4.6
Once a week	10	15.4
Never	22	33.8
Walking		
More than 3 times per week	65	100.0
2 times per week	0	0.0
Once a week	0	0.0
Never	0	0.0
Swimming		
More than 3 times per week	2	3.1
2 times per week	0	0.0
Once a week	2	3.1
Never	61	93.8
House work		
More than 3 times per week	34	52.3
2 times per week	3	4.6
Once a week	3	4.6
Never	25	38.5
Farming		
More than 3 times per week	2	3.1
2 times per week	2	3.1
Once a week	13	20.0
Never	48	73.8

Table 11

Chronic Heart Failure Self-care Practices (7) (N = 65)

Variable	Frequency	Percentage
Reasons for stopping activity		
Shortness of breath	58	89.3
Dizziness	10	15.4
Chest pains	34	52.3
Irregular pulse	7	10.8
Fatigue	63	96.9
Severe sweating	0	0
Frequency of Rest during the day per week		
Daily	8	12.3
6 days	3	4.6
5 days	14	21.5
4 days	20	30.8
3 days	17	26.2
2 days	3	4.6
1 day	0	0.0
Never	0	0.0

Table 12

Chronic Heart Failure Self-care Practices (8)

(N=65)

Variable	Frequency	Percentage
Barriers to following Treatment Plan		
Lack of Knowledge	4	6.2
Forgetfulness	5	7.7
Difficulties going away from home when on diuretics	42	64.6
Waking up at night frequently to go to the toilet	21	32.3
Lack of energy to exercise/do activities	9	13.8
Inability to cook	3	4.6
Scarcity of recommended foods and drugs	40	61.5
Craving for salty foods	12	18.5
Drugs too expensive	40	61.5
Mobility problems and distance from health care facility	15	23.1
Feeling overwhelmed and depressed	3	4.6

Table 13 shows total scores by subjects on chronic heart failure self-care practices. The maximum score was 93 and minimum was 0. A score of 46.5 and above indicated satisfactory levels of self-care practices. The respondents' chronic heart failure self-care practices scores ranged from 27 to 68. One respondent (1.5%) had a score of 27 and another (1.5%) had a score of 30. Scores of 33, 34, 36, 46, 50, 55 and 57 were possessed by 2 (3.1%) study participants each. Scores of 41, 43, 52, 53 and 58 were possessed by 3 (4.6%) study participants respectively. Scores of 38, 39, 44, 49 and 54 were possessed by four (6.2%) study participants each. Five respondents (7.7%) had a score of 42. Scores of 40, 45, 47, 51, 56, 60, 62, 64 and 68 were possessed by one (1.5%) respondent each. The mean score was 46.5; median 45 and the modal score was 42. Thirty-five of the subjects (53.8%) were below the respondents mean score and thirty subjects (46.2%) were above the mean.

Self-care Practices and Readmissions

Pearson's correlation analysis was used to examine the relationship between the level self-care practices (independent variable) and the number of readmissions (dependent variable). The correlation (r) is an index that measures the strength or magnitude and direction of a linear relationship (Brink, 1988). After computing the Pearson's correlation coefficient it was found to be r -.436. The significance level was <.01. The negative sign on the correlation coefficient (r) indicates that there is a negative linear relationship. It means that as the independent variable was increasing

the dependent variable was decreasing. The results support that as self-care practices improve the number of readmissions decreases.

Table 14 shows that the self-care practices were negatively correlated with the number of readmissions (r = -.436, p = < .01). This according to Brink (1988), signifies a weak association between the independent variable (self-care practices) and the dependent variable (readmissions).

Regression Analysis

Regression analysis was used to examine the strength of the relationship between the self-care practices (independent variable) and readmissions (dependent variable) in chronic heart failure. Results of regression analysis of self-care practices are shown in Table 15. According to Brink (1988) regression analysis is an estimation of the linear relationship between the independent and dependent variable. The effect of the chronic heart failure self-care practices (independent variable) is indicated by significant R^2 = .191 (F = 14.828, p < .001). The effect of the independent variable (self-care practices) accounts for 19% of the variance in the dependent variable (readmissions)

The significant b indicates the relative importance of the independent variable (self-care practices). The bigger the value of b, the more important in terms of its contribution to the dependent variable (readmissions). The importance of self-care practices in this study therefore was 40.3% in terms of its contribution to the number of readmissions with chronic failure. The self-care practices have a negative effect on readmissions.

Table 13

Chronic Heart Failure Self-care Practices (N = 65)

Variable	Frequency	Percentage
Level of chronic Heart Failure self-care Practices		
(Scores out of 93)		
27	1	1.5
30	1	1.5
33	2	3.1
34	2	3.1
36	2	3.1
38	4	6.2
39	4	6.2
40	1	1.5
41	3	4.6
42	5	7.7
43	3	4.6
44	4	6.2
45	1	1.5
46	2	3.1
47	1	1.5
49	4	6.2
50	2	3.1
51	1	1.5
52	3	4.6
53	3	4.6
54	4	6.2
55	2	3.1
56	1	1.5
57	2	3.1
58	3	4.6
60	1	1.5
62	1	1.5
64	1	1.5
68	1	1.5

Table 14

Pearson's Correlation Matrix of Chronic Heart Failure Self-care Practices. (N = 65)

	Y
	1.000
X	-.436**

*p < .05	**p < .01	*** p < .0001

Y (Number of Readmissions)

X (Self-care Practices).

Table 15

Regression Analysis of Readmissions

Variable	B	SEB	Beta
X	-.403	.015	-.436**
Constant	5.938	.729	

$R^2 = .191** \ F = 14.828$

* P = < .05   ** p = < .01   *** p = < .001

(N = 65)

X (Self-care Practices).

CHAPTER 5

DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

Summary

The purpose of this study was to describe and examine the relationship between self-care practices and readmissions among adults aged 40 to 80 years with chronic heart failure at a Central hospital in Harare, Zimbabwe. The sample consisted of 65 randomly selected male and female chronic heart failure patients on digoxin and furosemide. Orem's self-care model was used to guide this study.

The dependent variable in this study was number of readmissions. The minimum number of readmissions was 0 and the maximum number was 5. Twenty-one respondents (32,3%) reported no readmissions in the period of 2007 and 2009. One respondent (1,5%) reported above 4 readmissions for chronic heart failure in the same period. The mean number of readmissions was 1,25.

The independent variable in this study was self-care practices. The self-care practices looked at were medication and diet, symptom management and rest and activity/exercises. Only 12 (18.5%) respondents always ensured enough supply of medication for daily use, 16 (24.6%) had never missed their doses of medication in the past month, 19 (29.2%) always kept scheduled appointments, 7 (10.8%) always sought help of the health care provider for prompt treatment of weight gain of more than 2kg per week, only 3 (4.6%) for palpitations and only I (1.5%) respondent would consult promptly for worsening fatigue. All 65 (100%) study participants were active and they would rest during the day in varying degrees. The highest expected score for chronic

heart failure self-care practices was 93 points, the lowest score was 0 and the mean score was 46.5. A score of more than 46.5 in the results meant satisfactory self-care practices than a score below 46.5. According to the results, the respondent with the highest self-care practices scored 68 and the lowest scored 27 out of 93 points. Thirty-five respondents (53,8%) scored below 46.5.

The inferential statistics of Pearson Correlation was computed to find the relationship between self-care practices and readmissions. There was a negative linear relationship between the self-care practices and readmissions with chronic heart failure (r= -.436; p<.01). As self-care practices improved the number of readmissions decreased. Simple regression analysis was done to examine the extent of the influence of self-care practices on readmissions. The significant R^2 of .191 supported that self-care practices explains 19% of the variance on readmissions. Reliability of the instrument was measured using Cronbach alpha, which for this study was .716.

Discussion and Implications

Sample Demographics

The sample consisted of 65 chronic heart failure patients attending review clinics at the outpatients' department. There were more females 42 (64,6%) than males 23 (35,4%) and this is contrary to Cowie (2002) who stated that chronic heart failure is 75% higher in males than in females. It also disagrees with Roberts and Griffith (2005) who said that chronic heart failure occurs equally in men and women. This

could be explained by the fact that women are the ones who come to hospital when there are problems in the family.

The age ranges for the study sample ranged from 40 to 80 years with a mean of 56 years. Majority of previous studies focused on the elderly clients aged above 65 years (Cline, Israelsson, Willenheimer, Broms & Erhardt 2000; Mcnlntyre, Barret, Murphy, Sutcliffe & Walker, 2002; Gary, 2006; Rong, Moser, Lennie, Peden, Chen & Heo, 2008). The age range in this study agreed with Owusu (2007) who said that in Africa heart failure occurs early in life and cited the mean age of women with chronic heart failure as 53,9 years and 58,4 years for men. Twenty-two respondents (33,8%) were aged 65 to 80 years and this supports the literature that says chronic heart failure is prevalent in the elderly population above 65 years (Cline, Israelsson, Willenheimer, Broms & Erhardt 2000; Roberts & Griffith, 2005).

Majority of the respondents 46(70,8%) were married. This could be explained by the fact that the study participants were adults aged 40 years and above. In an African culture majority of the people will be married at 40 years. Christians constituted 57 (87,7%) of the sample and 8 (12,3%) were traditionalists. This could be explained by the fact that majority of Zimbabweans are Christians.

The study findings show that only 3(4,6%) had reached tertiary level. This could explain why 47 (72,4%) respondents were unemployed, 11 (16,9%) respondents being self-employed and only 3(4,6%) were professionals. This could also be explained by the Zimbabwean unemployment rate of 94% (Unemployment Skyrocket, 2009) Resultantly, 48(73,8%) had a monthly salary of less than 50 American

dollars(US$50) and only one respondent (1,5%) had a monthly salary of above US$450. It thus makes it difficult for majority of the patients to seek relevant medical attention promptly due to the fact that outpatients' fees have been pegged at US$10 per visit and there is no facility to assist those who cannot afford the hospital fees.

However, total monthly expenditure on drugs, transport and other medical expenses were on the low side with 48(73.9%) respondents having total monthly expenditures below US$40. The fact that government hospitals in Zimbabwe have a facility that enables the elderly (above 65 years) to access free medical services as long as they have proof that they are 65 years old and above ameliorates the situation. This means that the chronic heart failure patients above 65 years will require money for transport only. However, the chronic shortage of drugs at the study centre made it difficult for the chronic heart failure patients to follow the treatment plan. This could explain why only 12 (18.5%) respondents always ensured enough supply of medication for daily use.

Most 50 (76.9%) of the study participants lived in the urban area and this is so because the central hospital at which the study was done is situated in the capital city and mainly caters for the urban population. All study participants 65 (100%) were neither taking alcohol nor smoking cigarettes although Hanyu, Nauman and Burgess (2000) discovered in their study that 25% of the sample did not understand alcohol risk associated with chronic heart failure. This study did not explore whether the respondents were not taking alcohol and smoking cigarettes because they understood

the risks associated with alcohol or they were not taking alcohol or smoking because they were told not to do so.

This study included chronic heart failure illness related demographics. The respondents had been living with chronic heart failure ranging from 3 years to 10 years. Majority of the respondents 36 (55,4%) had had chronic heart failure for 3 years. The duration of illness met the inclusion criteria for this study. Duration of illness of the study participants ranged from 3 to 10 years and only 24(36.9%) respondents had been readmitted twice or more during the 2 year period.. This suggests that the duration of illness might affect the general self-care practice of patients with chronic heart failure. However, Carlson and Riegel (2009) cited that duration of illness influenced self-care responses particularly symptom recognition and management that is, symptom recognition and management may have been better for experienced patients than for newly diagnosed patients.

The study results showed that most of the subjects got their drugs from the hospital pharmacies maybe because of the prices which were lower than at private pharmacies. The unavailability of the drugs most of the time at the hospital pharmacies poses a challenge to adherence to the prescribed medications. This could explain why some patients were not taking the prescribed drugs and some taking frusemide alone although frusemide and digoxin were prescribed.

<div align="center">Readmissions</div>

The number of readmissions ranged from zero to above 4 times for the 2 year period from 2007 to 2009. Twenty-one (32,3%) respondents reported no readmissions

and 44 (67.8%) reported to have been readmitted at least once in the past 2 years. The mean number of readmissions was 1,25. The readmission rate in this study is quite high and has implications on the hospital burden, the client's financial burden as well as the patient's lifestyle (Robert & Bowling, 2001). The readmission rate has decreased compared to results found by Nyamakura (1999) who found a readmission mean of 2,6 at the same study site. The frequent readmission results in the studied sample concur with the available literature which states that readmissions occur frequently in chronic heart failure population (Cleland, 2002; Mayosi 2007; Mostered & Hoes, 2007; Owusu, 2007).

The lower readmission rates could be due to improved self-care practices, patients not seeking medical attention for exacerbating chronic heart failure symptoms due to financial constraints and the closure of the central hospitals due to the industrial action by health workers. The number of readmissions averaging 1,25 and 44 (67.7%) being readmitted at least once in the 2 year period is a cause of concern especially among clients who have had the disease for at least 3 years who are assumed to have the knowledge, skill and experience to perform therapeutic self-care to attain health related quality of life.

Chronic Heart Failure Self-care Practices

A total score of 93 was the highest possible score expected in this study and it represented the presence of the best self-care practices. Study participants with the poorest self-care practices were expected to score as low as 0 (the least possible self-

care practices score). The mean score for the chronic heart failure self-care practice interview schedule was 46.5 and the mean self-care practices score for the sample was 46,5. These results show that the sample had average self-care practices.

Fifty-two (80%) respondents were taking both frusemide and digoxin consistently. This is in line with Gary (2006) who found out that 72% of the women with diastolic heart failure took medications as prescribed. Four (6,2%) respondents were taking furosemide only and 9 (13,8%) did not know drugs they were taking or were not taking any drugs or despite the fact that they were prescribed. Only 12 (18,5%) respondents always ensured that they had enough supply of medication for their daily use and the majority 37 (56.9%) ensured enough supply once in a while which is a cause for concern. Majority of the study participants 49 (75,4%) had missed their doses at least once in the past month with 16 (24,6%) having missed their doses 3 or more times in the past month. All these results show that there is poor compliance with medications. This is in line with Schiffer, Denollet, Wddershoven, Hendriks and Smith (2007); Vinson, Rich and Sperry (2000).

Only 19 (29.2%) respondents always kept their scheduled appointments to be seen by doctors and get prescriptions to buy drugs. The poor adherence to medications and keeping of scheduled appointments could be explained by the fact that 40 (61.5%) respondents cited cost and scarcity of drugs as a barrier to following treatment plan. It was also supported by the fact that 27 (41.5%) respondents reported that their monthly income was never enough to pay for drugs, transport to the hospital and other medical

services such as echocardiography and electrocardiography. Only 8 (12,3%) respondents reported that their monthly incomes were always enough to pay for all medical expenses and transport. The study participants who reported that their monthly incomes were always enough to pay for their transport to the hospital, drugs and other medical services were mostly the elderly who were above 65 years of age who were exempted from paying hospital fees.

The study results also indicated that 27 (41.5%) respondents always followed instructions when taking medications and such instructions included taking the medications as directed for life unless advised to stop by the doctor. The reason why more than half of the sample was not always following instructions can be explained by the findings by Grange (2005) who found out that patients feel better after hospitalization and they feel they don't need to take so many tablets resulting in poor adherence to medications.

Daily plans and social outings interfered to varying degrees, with the taking of diuretics of 54 (83%) respondents. The respondents said they would skip their diuretic doses when going to church, hospital or traveling to other places. These results agree with Gary (2006); Bentley, DeJong and Moser (2004) who found that decision about self-care practices such as taking diuretics was based on daily plans and social outings. The majority of the respondents 63 (96.6%) had never used a medication organizer to remind them to take their medication; instead most of them relied on meal times to take their medications resulting in a habit of daily medication use. This agrees with

Rong, Moser, Lennie,Peden, Chen and Heo (2008) who cited environmental cues, effectiveness of the medications to reduce signs and symptoms of heart failure as reminders to take medications. The findings by Rong et al (2008) might also explain why those who were taking one drug instead of the prescribed two (frusemide and digoxin) were taking frusemide only. Frusemide is a diuretic that reduces water retention hence relieving dyspnoea, oedema and weight gain (Robert & Bowling, 2001).

The results of the study indicated that majority of the respondents 33 (50.8%) were eating salty foods with 6 (9.2%) eating salty foods always and 18 (27.7%) added salt to their relish at the table. These results are in line with the findings of the study done by Hanyu, Nauman and Burgess (2000) who discovered that although 80% of the patients knew that they should avoid high sodium foods only a third avoided high sodium foods. Bennet, Huster and Baker (2000) attributed 55% of chronic heart failure readmissions to sodium and fluid overload. These results can be explained by study participants 12 (18,5%) who cited craving for salty foods as a barrier to following treating plan. This is also supported by the Heart Failure Society of America (HFSA) (2002) which also identified craving for salty foods as a barrier to following treating plan.

Phipps, Sands and Marek (1999) suggested that chronic heart failure patients should always examine the labels of processed foods to ascertain their sodium content. However, 48 (73.8%) respondents never checked the labels of processed foods and

only 2 (3.1%) always checked the label despite the fact that Bennet, Huster and Baker (2000) cited sodium and volume overload as a factor in 55% of chronic heart failure readmissions.

The study results indicated that only 1(1.5%) respondent checked for any weight gain that resembled fluid retention daily and 29 (44.6%) never checked for weight gain. These values were lower than the 19% of women with diastolic heart failure who weighed themselves daily Gary (2006). Lookwood, Hevas-Malo and Guitierrez (2001) had results that support these findings where 87% of the sample studied had scales but only 30% actually weighed daily. The study participants who checked their weight had to resort to checking changes in ankle circumferences, cuff sizes and waist line sizes.

Dyspnoea was identified by all subjects 65 (100%) as a symptom that is experienced as a result of chronic heart failure. A few subjects 5 (7,7%) identified weight gain respectively as a symptom that was caused by chronic heart failure. This might explain why majority of the subjects did not weigh daily. It might be because the subjects did not appreciate the importance of daily weights. To support this 35 (53.8%) respondents reported that they would never seek the help of a health care provider for weight gain of more than 2kg per week until the weight gain is life threatening and only 7 (10.8%) respondents would always seek medical attention for weight gain more than 2kg per week. Weight gain seems not to be a symptom that the

subjects appraised as needing early detection, management and prompt treatment by a health care provider if it fails to resolve in chronic heart failure.

Chest pain and dyspnoea had the highest frequencies, 57 (87.7%) and 47 (72.3%) respectively which the subjects reported that they would always seek medical attention if symptoms fail to resolve. Only 1 (1.5%) respondent said that he always seek help of a health care provider for worsening fatigue. These results might be due to confusion over symptom recognition (Gary, 2006; Gibbs, McCoy, Gibbs, Rogers & Addington-Hall, 2002). Since the sample consisted of 22 (33.8%) respondents who were aged 65 to 80 years, these results could also be due to the fact that elderly patients attribute symptoms of chronic heart failure to old age, decreasing physical and mental capabilities and the belief that nothing can be done to improve their symptoms (Gibbs, 2002). Mobility problems and distance from the health care facility could also explain these results since 15 (23.1%) respondents reported this as a barrier to following treatment plan.

Findings in this study indicated that all the subjects were active. All the respondents were walking at least 3 times per week. This is contrary to what Schnell-Hoehn, Naimark and Tate (2007) and Riegel and Dickson (2008)'s findings which indicated that 91% and 82% of the study subjects were sedentary. The differences between this study and other studies could have been due to the differences in the condition on the patients or classes of heart failure. This study excluded the critically ill and the participants were attending the outpatients' clinics where stable patients are

seen. Forty (61.5%) respondents were doing housework to varying degrees and 25 (38.5%) were never involved in housework. This could be explained by the fact that the sample had more females than males. Only 4 (6.2%) respondents were involved in swimming. This could be due to the fact that only 4(6.2%) were from the low density suburbs where swimming may be possible. Twenty-five (26.2%) respondents were involved in farming. This can also be explained by the places of residence that is, there were 14 (21.5%) respondents from the rural areas and 1 (1.5%) respondent from the farming community. These are the areas where farming is common.

The study findings show that majority of the respondents 63 (96.9%) would stop exercising when experiencing fatigue and 58 (89.3%) reported shortness of breath as a sign that meant they should stop exercising/activity. The high frequency for fatigue could be explained by the fact that even the general population would stop exercising/activity when they experience fatigue. Irregular pulse was reported by only 7 (10.8%) respondents as a sign that would make them stop exercising/activity. This could be because of the respondents' failure to appraise irregular pulse as a chronic heart failure symptom that needs attention.

All study participants 65 (100%) reported that they would rest during the day per week with 8 (12.3%) respondents resting during the day daily per week as recommended by the Heart Failure Society of America (2006). The study findings indicated that the most common barriers to following treatment plan were difficulties going away from home when taking diuretics 42 (64.6%), scarcity of recommended

foods and drugs 40 (61.5%) and exorbitant prices for drugs such that they become out of reach for many 40 (61.5%). Three respondents (4.6%) reported that they felt depressed and overwhelmed and they would eat salty foods that they described as 'tasty'.

Relationship between Self-care Practices and Readmissions

The study results show a negative significant correlation (r=-.436 p<.01) of self-care practices and readmissions of chronic heart failure patients. The results show that as self-care practices improve the readmissions decrease. A significant negative effect (b-.4035 p<.01) of self-care practices on readmissions in chronic heart failure patients is also indicated. Therefore, self-care practices have an effect on readmissions. The results support that improved self-care practices reduce readmissions. The significant regression coefficient indicates a change in readmissions for every unit change in self-care practices. The significant R^2 supports that self-care practices explain 19% of the variance in readmissions.

The results above concur with the finding of several studies on the effects of self-care practices on hospital readmission rates. Jovicic, Holroyd-Leduc and Straus (2009) in 6 randomized control trial with 857 patients concluded that as self-care improves overall hospital readmissions (Odd Ratio 0, 59; p=.001) and readmissions for chronic heart failure (Odds Ratio 0.44; p=.001) decreases. In a preliminary study using data collected from 195 chronic heart failure patients, Lee (2009) found that

those who engaged in above average self-care practices had a 22% to 88% lower risk of an event during the follow up than those who engaged in below average self-care.

Cline, Israelsson, W(illenheimer, Broms and Erhardt (2000) support the view of improving self-care practices to reduce readmissions. The investigators demonstrated that interventions such as giving guideline for self care management, giving medication organizers to chronic heart failure patients and follow up visits by nurses were experienced in managing heart failure to see if they were following the treatment plan would result in fewer readmissions among the intervention group than in the control group (risk ratio 0.72; p=.08). The mean number of readmissions was 36% lower in intervention group than in the control group. The interventions appear to influence patients' self-care agency through self-care practices as postulated by Orem (1991).

Dorothea Orem's Self-Care Model

Orem's self-care model was used to guide this study. Orem states that basic conditioning factors affect the person's self-care agency and self-care. In this study some of the basic conditioning factors were age, sex, employment status, disease duration, monthly income and total monthly expenditure on drugs, transport and other medical services. Orem (1991) states that self-care agency is the abilities of the person for accomplishing self-care demands. Self-care agency in this study was the ability to follow treatment plan in terms of medications and diet, symptom management and rest and activity/exercises to minimize readmissions.

The self-care framework was applicable in assessing self-care practices and readmissions among adults with chronic heart failure. The self-care practices were satisfactory as the majority 35 (53.8%) scored below the mean. Use of Orem's self-care model in this study assisted to find the relationship between self-care practices and readmissions. Orem (1991) states that as self-care agency increases, self-care increases. Orem's model was supported in this study as it was noted that self-care practices were negatively correlated to readmissions. The link between self-care practices and readmissions was confirmed as the results showed that improvements in self-care practices would lead to a decrease in the number of readmissions

Implications to Medical Surgical Nursing

Nursing Practice

Self-care is an important construct because it captures the essence of the philosophy of nursing and it is a key dimension of nursing practice. This study indicated the self-care practices were poor with 35 (53.8%) respondents scoring below the chronic heart failure self-care practices interview schedule mean of 46.5. A score range of 41 means there were respondents with very poor self-care practices and others with good self-care practices. Readmissions in the past 2 years were quite high as well. Medical surgical nurses need to strengthen health education and support to patients with chronic heart failure.

Thorough psychosocial assessment of chronic heart failure should be done to assess readiness to learn and the ability to internalize medical information given. The significant others should also be included so that they have an understanding of why the chronic heart failure patients should adhere to their medications and the low salt diet. This is important especially with the elderly who have other activities such as cooking being done by the significant others. There is also need to assess resource availability and adequacy since majority of the study participants identified cost and scarcity of drugs as a barrier to following treatment plan. There is need to have a system that caters for those who can't afford to pay the hospital fees.

Medical surgical nurses working with the chronic heart failure patients should have counseling skills to assists the patients in coping with this chronic condition so that they don't feel overwhelmed and depressed. Through this study awareness has been generated for the discipline of nursing particularly medical surgical nursing practice. Medical surgical nurses should continue to update and strengthen self-care practices in chronic heart failure using Orem's Self-care model as a guiding framework for practice.

Nursing Research

Nursing practice should be influenced by research findings. There should be a link between research and practice. The findings revealed that subjects had poor self-care practices particularly in medications and diet and symptom management although only a few subjects 4 (6.2%) reported lack of knowledge as a barrier to following

treatment plan. This means that there might be lack of motivation in health promotion which leads to worsening of the chronic illness leading to readmissions. There is need to carry out studies on how barriers to following treatment plan can be alleviated. There is also need to carry out studies to examine the relationship between self-care knowledge and self-care practices.

Nursing Education

Medical surgical nurses need to be equipped with adequate and current information on chronic heart failure self-care practices. Chronic heart failure patients should be given self-care management skills with nurses who have the current knowledge and experience in heart failure. In-service education for trained staff is very important because it helps staff to keep abreast with current trends regarding chronic heart failure.

Nursing Administration

Nurse administrators should ensure that the environment is conducive for the nurses to teach self-care activities and discuss with patients the difficulties they have in following recommended treatment plan. The administrators must also lobby and advocate for better strategies to improve self-care practices such as ensuring availability of drugs used by the chronic heart failure patients and also having a system in place that caters for the chronic heart failure patients who are below the age of 65 years who cannot afford to pay for hospital fees. Nurse administrators should

also spearhead collaboration with community nurses who should do follow up visits to ensure that patients are always following the recommended treatment plan.

Recommendations

Based on the study findings the recommendations are:

1   Medical surgical nurses working in the outpatients' departments should create rapport with chronic heart failure patients to enable them to open up and freely talk about their difficulties with self-care activities.

2   Medical surgical nurses should strengthen health education on signs and symptoms and the importance of early identification and management of signs and symptoms with emphasis on symptoms such as weight gain, worsening fatigue, irregular pulse and palpitations and also the need to rest daily. There is need to strengthen health education on the importance good compliance with drugs and keeping scheduled appointments

3   A thorough psychosocial assessment of chronic heart failure should be done on every visit to ascertain resource availability and adequacy. This is important because it assesses readiness to learn and any perceived barriers to following treatment plan.

4   Further experimental studies are recommended whereby self care practices such as adherence to low salt diet and medications are objectively

measured, for example measuring 24 hour urine sodium levels to assess adherence to a low salt diet.

Limitations

1   There was limited literature on number of readmission among chronic heart failure in Zimbabwe, Africa and globally. Available literature was on number of people readmitted during a certain period of time not number of readmissions of patients with chronic heart failure.

2   The investigator developed the instrument and it was used for the first time in this study. However, medical surgical experts tested content validity. The instrument was also pre-tested. The instrument was also translated into vernacular language by the investigator which could also introduce bias.

3   Self reports were used to collect data so bias might have been introduced because study participants needed to recall information on past behaviour on adherence to medications and low salt diet and readmissions. This sometimes lacks accuracy.

4   The study was done at only one centre outpatients' department, so results were not generalizable beyond the study sample.

5   The sample size was small making the results not generalizable beyong the study sample.

Summary

Readmissions are common in chronic heart failure patients and constitutes 3-7% of all readmissions due to cardiovascular diseases (Cline, Israelsson, Willenheimer, Broms and Erhardt (2000; Mayosi, 2007). Poor self-care practices that include failure to recognize some important symptoms, poor adherence to diet and medications were attributed to readmissions (Bennet, Huster & Baker, 2000; Carlson & Riegel, 2009). This study examined the relationship between self-care practices and readmissions among adults aged 40 to 80 years with chronic heart failure.

The purpose of this study was to describe and examine the relationship between self-care practices and readmissions among adults aged 40 to 80 years with chronic heart failure. A convenience sample of 65 adults with chronic heart failure was interviewed using a structured interview schedule. The study participants were from the outpatients' cardiac and medical clinics at a central hospital in Harare, Zimbabwe. Orem's Self-care Model was used as a guiding framework for the study. Self-care agency had an influence on self-care which would affect health outcome that is self-care abilities would influence readmissions.

The study utilized a descriptive correlational non experimental design. This study examined the variables under study as well as the direction of the

relationship. The variables under study were self-care practices and readmissions.

Data was coded and it was analyzed using the Statistical Package of Social Sciences (SPSS) and Microsoft Excel programs. It was analyzed in two stages. The first stage involved analysis of data using descriptive statistics. The second stage involved using the inferential statistics. Pearson's Correlation coefficient was used to examine the relationship between self-care practices and readmissions. Findings indicated a weak negative linear relationship (r= -.436; p<.01)

Regression analysis for the readmissions also revealed that 19% of the variance observed in readmissions was a result of self-care practices (R^2=.191; p<.01) (F=14.828, p<.01). Regression coefficient (b = -.4035) represented a change in readmissions for every unit change in self-care practices. This study supported that good self-care practices decrease number of readmissions. Medical Surgical nurses should therefore strengthen education and support to chronic heart failure patients for them to follow recommended self-care practices because it was found to have a significant influence on readmissions which when reduced, reduces health care costs and improve the patients health related quality of life.

REFERENCES

Annema, C., Luttik, M. L., & Jaarsma (2009). Reason for readmissions: Perspectives of patients, caregivers, cardiologists and heart failure nurses. <u>Heart and Lung: The Journal of Acute and Critical Care</u> 7, 112-115.

Artinian, N. T., Maqnan, M., Sloan, M., & Lange, M. P. (2002). Self-care behaviours among patients with heart failure. <u>Heart and Lung</u> 31, 161-172.

Bennet, S. J., Huster, G. A., & Baker, S. L., (2000). Characterization of precipitants of hospitalization for heart failure decompensation. <u>American Journal of Critical Care, 7,</u> 168-174.

Bentley, B., DeJong, M., & Moser, D., (2004). <u>The hidden reasons for patients' non adherence to low salt diet recommendations</u>. Abstract from the Heart Failure Society of America 8th Annual Scientific meeting. Washington, DC.

Brink, H. I. L. (1988). <u>Statistics for Nurses</u> (1st ed). Pretoria: Academica.

Bruggink-Andre de la Porte, P. W.F., Lok, D. J. A., Veldhuisen, D. J., Wijngaarden, J. V., Cornel, J. H., Zuithoff, N. P.A., Badings, E.,& Hoes, A. W. (2007). Added value of physician-and-nurse directed heart failure clinic: results from Deventer-Alkamaar heart failure study. <u>Heart.</u> 93, 819-825.

Burns, K. K., (2005). Non-experimental research. <u>Nursing,</u> 11, 13-17.

Burns, N. and Grove, S. K. (1997). <u>The practice of Nursing Research: Conduct, Critique and Utilization</u> (3rd ed) Philadelphia, W. B. Saunders Company.

Carlson, B., & Riegel, B., (2009). Self-care abilities of patients with heart Failure, <u>Archives of Internal Medicine,</u> 180(6), 705-712.

Chim, C. L., & Mancini, D. M., (2007). Non cardiac comorbidities in chronic heart failure. Heart, 93, 665-671.

Cleland, J. G. F., (2002). Contemporary management of heart failure in clinical practice. Heart, 88, ii5-ii8.

Cline, C. M. J., Isaelsson, B. Y. A., Willenheimer, R. B., Broms, K., & Erhardt, L. R. (2000). Cost effective management program for heart failure reduces hospitalization. Heart. 80, 442-446.

Conn, V., (1991). Self-care actions taken by older adults for influenza and colds. Nursing Research, 40 (3), 176-181.

Cowie, M. R., (2002). Best practice: evidence from the clinical trials. Heart, 88, (Suppl. 11), ii2-ii4.

Dickson, V., Deatrick, J., Riegel, B., (2009). A typology of heart failure self management in non elders. European Journal of Cardiovascular Nursing, 7(3), 171-181.

Fawcett, J, (1995). Analysis and Evaluation of Conceptual Models of Nursing (3rd ed). Philadelphia: F. A. Davis.

Fitzpatrik, J. J. and Whall, A. L., (1996). Conceptual Models of Nursing: Analysis and Application. (4th ed). Appleton and Lange: California.

Fonarow, G. C., Abraham, W. T., Albert, N. M., Gattis, W., Gheorghiade, M., Greenberg, B. H., O'connor, C. M., Pieper, K., Sun, J. L., Yancy, C., & Young, J. B. ,(2007). Association between performance measures and clinical outcome for patients

hospitalized with heart failure. The Journal of American Medical Association. 96, 513-520.

Gary, R. (2006). Self-care practices in women with diastolic heart failure. Heart and Lung. 35, 9-19.

Grange, J. (2005). The role of nurses in the management of heart failure. Heart, 91, ii39-ii42.

Gibbs, J. S. R., McCoy, L.M.E., Gibbs, A.E., Rogers, J., & Addington-Hall, M., (2002). Living with and dying from heart failure: The role of palliative care. Heart, 88, ii36-ii39.

Gupta, S., Gandhi, N., Burgess, L., & Brooks, N. (2005). Effects of physical training on anxiety and depression in chronic heart failure. Heart. 91, 576-580

Hanyu, N., Nauman, D., & Burgess (1999). Factors influencing knowledge of and adherence to self-care among patients with heart failure. Archives of Internal Medicine, 159, 1613-1619.

Hardman, S. M. C. (2002). Heart failure: Across the interface and beyond. Heart, 88, ii28-ii32.

Heart Failure Society of America (HFSA) (2002). Barriers to following treatment plan, Self-care Guidelines, St Paul.

Heart Failure Society of America (HFSA) (2006). Exercise and Activity. Module 5, St Paul.

Jolly, L. (2004). The role of the specialist nurse chronic heart failure. Heart, 88, (suppl. 11) ii33-ii35.

Jovicic, A., Holroyd-Leduc, J. M., Straus, S. E., (2009). Effects of self-management intervention of patients with heart failure: a systematic review of randomized control trials (PMID: 17081306). Ontario, Toronto: University of Toronto, Department of Mechanical and Industrial Engineering.

Lee, C. (2009, Spring). The influence of heart failure self-care behaviour on cardiac performance. UpFront, 14-15.

Lipsey, M. W., (1990). Design sensitivity: Power for Experimental Research. Newbury Park; Sage Publications.

Lockwood, E. E., Hervas-Malo, M., & Guitierrez, B., (2001). Patient knowledge of self-care activities in congestive heart failure. Abstract from Heart failure Society of America 8th Annual Scientific meeting. Washington, DC.

Mahaka, H. T., (2006). The relationship between pregnant women's hypertension self-care knowledge and hypertension control at a referral hospital in Harare, Zimbabwe. The Central African Journal of Medicine, 52, 5-6.

Makhubela, B. H. (2002). The Self-care Model of best Practice: Home Based Care. African Journal of Nursing and Midwifery. 4, 35-37.

Maponga, M. (2006). Relationship between eating and drinking patterns and oral thrush among subjects living with HIV and AIDS. Unpublished master's thesis, University of Zimbabwe, Harare.

Mayosi, B. M. (2007). Contemporary trends in the epidemiology and management of cardiomyopathy and pericarditis in sub-Saharan Africa. Heart, 93, 1176-1183.

McDonagh, T. A. (2002) Screening for left ventricular dysfunction: A step too far? Heart, 88, ii12-ii14.

Mejhert, M., Kahan, T., Pearson, H. and Edner, M. (2004). Limited long term effects of a management programme for heart failure. Heart, 90, 1010-1015.

Meleis, A. I. (1991). Theoretical Nursing: Development and Progress (2nd ed) Philadelphia: J. B. Lippincott.

Mosterd, A., Hoes, A. (2007). Clinical epidemiology of heart failure. Heart, 90, 1137-1146.

Nicholls, M. G., & Richards, A. M., (2007). Disease monitoring of patients with chronic heart failure. Heart ,93, 519-523.

Nyamakura, R. (1999). Self-care knowledge and readmissions among chronic heart failure clients at one of the Central Hospitals in Zimbabwe. Unpublished master's thesis, University of Zimbabwe, Harare.

Orem, D. E. (1991). Nursing Concepts of practice. St Louis: Mosby Year Book.

Owusu, I. K., (2007). Causes of Heart failure as seen in Kumasi, Ghana.The Internet Journal of the third world medicine (on line) 4, 2. www. Ispub.com.

Phipps, W. J., Sands, J. K. and Marek, J. (1999) Medical-Surgical Nursing: Concepts and Clinical Practice (6th ed) Mosby: St Louis.

Rich, M. W., Vinson, J. M., Sperry, J. C., Shah, A. S., Spinner, L. R., Chung, M. K., & Vila-Roman, V. (2002). Prevention of readmissions in elderly patients with

congestive heart failure: Results of a prospective, randomized pilot study. <u>Aging Health</u>, 2, 112-116.

Riegel, B., & Carlson, B., (2002). Facilitators and barriers to heart failure self-care. <u>Patient Education and Counseling</u>, 46(4), 287-295.

Riegel, B., & Dickson, V. V. (2008). A situation specific theory of heart failure self-care. <u>Journal of cardiovascular Nursing.</u> 23, 190-196.

Robert, E. H., & Lester, S. B., (2001). Reducing readmissions for congestive heart failure. <u>American Family Physician,</u> 63, 1593-1598.

Robert, W., & Griffith, M. D. (2005) US news.com. Health Section Content Developed with the Cleveland Clinic. <u>Heart and Circulation centre.</u>

Rong, W. J., Moser, D.K., Lennie, T.A., Peden, A. R., Chen, Y. C., & Heo, S. (2008). Factors influencing medication adherence in patients with heart failure. <u>Heart and Lung : Journal of Acute and Critical care.</u> 1, 8-16ei.

Schiffer, A. A., Denollet, J., Wilddershoven, J. W., Hendricks, E. H., & Smith, O. R. F. (2007). Failure to consult for symptoms of heart failure in patients with type-D personality. <u>Heart,</u> 93, 814-818.

Schnell-Hoehn, K., Naimark, B., & Tate, R., (2007). Self-care practices of heart failure patients. <u>Heart and Lung,</u> 82, 16-19.

Vinson, J. M., Rich, M. W., & Sperry, J. C., (2000). Early readmission of the elderly patients with congestive heart failure. <u>Journal of the Geriatric Society,</u> 38, 1290-1295.

Zimbabwe unemployment skyrocket. (2009, January31). <u>Mail & Guardian</u>. p 2.

Zrinyi, M., & Zekanyne, P., (2007). Does self-care agency change between hospital admission and discharge? : Orem based investigation, <u>Wiley </u>Interscience <u>Journals: International Nursing Review</u>, 5(3), 256-262.

APPENDIX A

SECTION 1

DEMOGRAPHIC DATA

I am going to ask you questions about yourself. Please feel free and answer to the best of your ability.

1   How old are you?   ☐

2   Gender   Male   ☐

                                            Female   ☐

3   What is your marital status?   Married   ☐

                                            Single   ☐

                                            Widowed   ☐

                                            Divorced   ☐

                                            Separated   ☐

                                    Other (specify) ………………..

4   What is your educational level?

                              No formal education   ☐

                              Primary   ☐

                              Secondary   ☐

                              Tertiary   ☐

5. What is your religion?   Traditional   ☐

                              Christianity   ☐

                              Moslem   ☐

Other (specify) …………………..

6. What is your occupation?

Unemployed	☐
Self-employed	☐
Unskilled worker	☐
Skilled worker	☐
Professional	☐
Retired	☐

Other (specify) ………………………..

7. What is your total monthly income (in US Dollars)?

below $50	☐
$51-$150	☐
$151-$250	☐
$251-$350	☐
$351-$450	☐
Above $450	☐

8. How much is your monthly expenditure on managing your heart failure?

   a. $…………

9. Where do you live?

Rural	communal	☐
	Farms A1	☐
	A2	☐
Urban	Low-density	☐
	High density	☐

Other (specify)………………………………………………………………………..

10. Do you smoke?　　　　　　　Yes　　　　　　　☐

　　　　　　　　　　　　　　　　No　　　　　　　☐

11. Do you take alcohol?　　　　Yes　　　　　　　☐

　　　　　　　　　　　　　　　　No　　　　　　　☐

12. For how long have you been suffering from heart failure?　…………….

(Confirm with medical records)

13. Where do you get your drugs?

　　　　　　　　　　　　　　a) Hospital pharmacies　　☐

　　　　　　　　　　　　　　b) Private pharmacies　　☐

　　　　　　　　　　　　　　c) Local clinic　　　　　☐

SECTION 11

READMISSIONS

I am going to ask you questions about the number of times you have been admitted into hospital with chronic heart failure. Please answer the question to the best of your ability

1. How many times have you been admitted into hospital for heart failure in the past

　　2 years?　　　　　　　　　Never admitted　　☐ 0

　　　　　　　　　　　　　　　　Once　　　　　　☐ 1

　　　　　　　　　　　　　　　　Twice　　　　　　☐ 2

Three times	☐	3
Four times	☐	4
More than 4 times	☐	5

SECTION 111

CHRONIC HEART FAILURE SELF-CARE PRACTICES (CHFSCP)

I am going to ask you questions about self-care practices (diet and medication, activity and rest and symptom management). Please answer questions to the best of your ability.

1 Which drugs are you taking for heart failure?

None	☐	0
Furosemide	☐	1
Digoxin	☐	1

2 How available are your daily medications for your daily use?

a) Always	☐	3
b) Most of the time	☐	2
c) Once in a while	☐	1
d) Never	☐	0

3How many times have you missed your doses in the past month?

a) 0	☐	3
b) 1	☐	2
c) 2	☐	1
d) ≥3	☐	0

4. How often do you keep scheduled appointments to get your prescription and buy your drugs?

    a) Always ☐ 3

    b) Most of the time ☐ 2

    c) Rarely ☐ 1

    d) Never ☐ 0

5. Is your monthly income enough to pay for your monthly drugs, transport and other medical expenses?

    a) Always ☐ 3

    b) Most of the time ☐ 2

    c) Rarely ☐ 1

    d) Never ☐ 0

6. How often do you follow special instructions when taking your drugs?

    e) Always ☐ 3

    f) Most of the time ☐ 2

    g) Rarely ☐ 1

    h) Never ☐ 0

7. How often do you take potassium supplements or foods, which are rich in potassium when taking diuretics?

    a) Always ☐ 3

    b) Most of the time ☐ 2

c) Once in a while   ☐   1

d) Never   ☐   0

8. To what extent do daily plans and social outings interfere with the taking of your daily medications?

a) No interference   ☐   3

b) To a little extent   ☐   2

c) To a moderate extent ☐   1

d) To a greater extent   ☐   0

9. How often do you use a medication organizer to remind you to take your medication?

a) Always   ☐   3

b) Most of the time   ☐   2

c) Once in a while   ☐   1

d) Never   ☐   0

10. How often do you take any of the following foods; canned foods, potato crisps, salted nuts, matemba, sausages, polony, salted biltong, salted popcorn, relish with excess salt?

a) Always   ☐ 0

b) Most of the time   ☐ 1

c) Once in a while   ☐ 2

d) Never   ☐ 3

11. How often do you add salt to your relish at the table?

        a) Always   ☐ 0

        b) Most of the time ☐ 1

        c) Once in a while ☐ 2

        d) Never   ☐ 3

12. How often do you check the labels of processed foods and drugs to ascertain sodium content?

        a) Always   ☐ 3

        b) Most of the time ☐ 2

        c) Once in a while ☐ 1

        d) Never   ☐ 0

13. How often do you check any weight gain that resembles fluid retention?

        a) Daily   ☐ 7

        b) Six times a week ☐ 6

        c) Five times a week ☐ 5

        d) Four times a week ☐ 4

        e) three times a week ☐ 3

        f) Two times a week ☐ 2

        g) Once a week   ☐ 1

        h) Never   ☐ 0

14. Which of the following signs and symptoms do you experience in heart failure?

a) Dyspnoea ☐ 1

b) Fatigue ☐ 1

c) Oedema (Legs, abdomen,face) ☐ 1

d) New cough ☐ 1

e) Palpitations ☐ 1

f) New nocturia ☐ 1

g) Chest pain ☐ 1

h) Weight gain ☐ 1

15. How often do you seek help from a health care provider for prompt treatment when the following symptoms fail to resolve?

	Always	Most of the time	Rarely	Never until symptoms are life threatening
a)Weight gain more than 2kg in a week				
b) Chest pain				
c) Palpitations				
d) Dyspnoea				
e) Worsening fatigue				
	3	2	1	0

16. How often do you engage in the following activities/exercise per week?

	≥3 times/week	2 times/week	Once a week	never
a) Gardening				
b) Walking				
c) Swimming				
d) Housework				
e) Farming				
	3	2	1	0

17. What makes you stop any of the above activities/exercises? When experiencing the following:

a) Shortness of breath that prevents completion of a sentence   ☐ 1

b) Dizziness/lightheadedness   ☐ 1

c) Chest pains, tightness   ☐ 1

d) Irregular pulse   ☐ 1

e) Severe sweating   ☐ 1

f) Extreme fatigue   ☐ 1

18. How often do you rest during the day per week?

       a) Daily   ☐ 7

       b) 6 days   ☐ 6

       c) 5 days   ☐ 5

       d) 4 days   ☐ 4

e) 3 days	☐ 3
f) 2days	☐ 2
g) 1 day	☐ 1
h) never	☐ 0

19.   Which of the following have been barriers to adherence to recommended medication and diet, symptom management and rest and activity/exercise?

a) Lack of knowledge ☐

b) Waking up at night to go to the bathroom ☐

c) Forgetfulness to take medicines ☐

d) Trouble getting away from home when on diuretic ☐

e) Lack of energy to exercise/do activities ☐

f) Inability to cook ☐

g) Scarcity of recommended foods and drugs ☐

h) Craving for salty foods ☐

i) Drugs too expensive ☐

j) Mobility problems and distance from the health care facility ☐

k) Feeling overwhelmed and depressed ☐

Other………………………………………………………………….

THANK YOU FOR PARTICIPATING

APPENDIX B

SHONA INTERVIEW SCHEDULE

MIBVUNZO INOTSVAGA NHOROONDO YEKUZVARWA, ZVIRWERE,

CHITENDERO, DZIDZO NEZVIMWEWO

Ndichakubvunzai mibvunzo yakanangana neupenyu hwenyu. Sunungukai zvenyu mupindure mibvunzo nepose pamunokwanisa.

1. Mune makore mangani?   [ ]

2. Murume kana mukadzi here?   a)murume   [ ]

                                     b)mukadzi   [ ]

3. makaroora kana kuroorwa here?   a)ndakaroora/ndakaroorwa   [ ]

                                     b)handisati ndaroora/ndaroorwa [ ]

                                     c)ndakafirwa   [ ]

                                     d)takarambana   [ ]

                                     e)takaparadzana   [ ]

zvimwewo (tsanangurai)……………………………………………………………

4. Makadzidza kusvika padanho ripi? a)Handina kumboenda kuchikoro   [ ]

                                     b)ndakaguma kupuraimari   [ ]

                                     c)kusekondari   [ ]

                                     d)kukoreji kana kuyunivhesiti   [ ]

5. Chitendero chenyu ndechipi?   a)chivanhu   [ ]

                                     b)chikirisitu   [ ]

c)Moziremu ☐

Chimwewo (tsanangurai)………………………………………………….

6. Munoita basa rei? a)Handishande ☐

b)ramaoko ☐

c)mushandi asina kudzidzira basa ☐

d)mushandi akadzidzira basa ☐

e)mushandi ane ruzivo rwepamusorosoro

maererano nebasarake ☐

f)ndakarega basa nekukura ☐

Rimwewo (Tsanangura)…………………………………………………

7. Munowana mari yakawanda sei pamwedzi? (mumadhora ekuAmerica)

a) $0-$200 ☐

b) $201-$400 ☐

c) $401-$600 ☐

d) $601-$800 ☐

e) $801-$1000 ☐

f) Above $1000 ☐

8. Munoshandisa marii pakurapwa chirwere chemoyo pamwedzi?a) $………………

…………………………………………………………………………………………

9. Munogara kupi? a) Kumaruwa/Kumusha ☐

b) kupurazi A1 ☐

A2 ☐

☐

c) mudhorobha kunogara vanhu vashoma ☐

d) kunogara vanhu vazhinji ☐

10. Munosvuta fodya here?   a)Hongu ☐

                 b)Kwete ☐

11. Munonwa doro here?   a)Hongu ☐

                 b)Kwete ☐

12. Mave nemakore mangani muchirwara nechirwere chemoyo chinogara kwenguva ndefu?…………………………………………………………………………

(tarira kufanana netsamba dzenhoroondo yeurwere dzavana chiremba)

13. Munowana mishonga yenyu kupi?

a. Pachipatara chikuru ☐

b. Muzvitoro zvemishonga zvisiri zvehurumende ☐

c. Chipatara chekwatinogara

CHIKAMU CHECHIPIRI

Ndichakubvunzai mibvunzo maererano nekudzoserwa kwenyu pamubhedha muchipatara nokuda kwechirwere chemoyo chinogara kwenguva refu. Munokumbirwa kuti mupindure semaziviro enyu.

1.   Makapiwa mubhedha muchipatara nekuda kwechirwere chemoyo kangani mukati memakore maviri apfuura?

                         a) handina   ☐   0

                         b)kamwechete   ☐   1

c)Kaviri ☐ 2

d)Katatu ☐ 3

e)Kana ☐ 4

f)Kanopfuura kana ☐ 5

CHIKAMU CHECHITATU

ZVINOITWA PAKUZVICHENGETA NECHIRWERE CHEMOYO

CHENGUVA NDEFU

Ndichakubvunzurudzai maererano nezvamunoita kuzvichengetedza muri mutano (kudya nemishonga, kuzorora nekushanda uye kurapa zviratidzo zvechirwere chemoyo.

1.   Muri kunwa mishonga ipi yechirwere chemoyo chenguva ndefu?

a) Handisi ☐ 0

b) Furosemide ☐ 1

c) Digoxin ☐ 1

2.   Mishonga yenyu yamunoshandisa mazuva ose inowanika zvakadii?

a) nguva dzose ☐ 3

b) nguva zhinji ☐ 2

c) apo neapo ☐ 1

d) haiwaniki ☐ 0

3.   Kangani kamakambodarika kunwa mishonga yenyu mumwedzi wapfuura?

a) Handina kudarika ☐ 3

b) Kamwechete ☐ 2

c) Kaviri ☐ 1

d) Katatu kana kudarika ☐ 0

4. Kangani kamunochengetedza nguva yenyu yamunofanira kuonekwa nachiremba muchipiwa tsamba yekutengesa mushonga nekutenga mishonga yacho?

a) Nguva dzose ☐ 3

b) Nguva zhinji ☐ 2

c) Apo neapo ☐ 1

d) Handichengedzi ☐ 0

5. Mari yenyu yamunowana pamwedzi inokwana here kubhadhara mishonga, kufambisa nezvimwe zvinodiwa kuchipatara?

a) Inokwana nguva dzose ☐ 3

b) Inokwana nguva zhinji ☐ 2

c) Inokwana nguva shoma ☐ 1

d) haimbokwani ☐ 0

6. Kangani kamunotevedzerwa zvakatarwa pakunwa mishonga yenyu?

a. Nguva dzose ☐ 3

b. Nguva zhinji ☐ 2

c. Apo neapo ☐ 1

d. Handitevedzeri ☐ 0

7.   Kangani kamutora zvinowedzera potassium, kana chikafu chine potassium yakawanda kana muchinwa mushonga unobetsera kurasa mvura?

a.   Nguva dzose   ☐ 3

b.   Nguva zhinji   ☐ 2

c.   Apo neapo   ☐ 1

d.   Handimbotori   ☐ 0

8.   Hurongwa hwamazuva ose kana kubuda muchitandara nevamwe zvinokanganisa zvakadii kutora kwamunoita mishonga yenyu?

a) Hazvikanganisi   ☐ 3

b) Zvinokanganisa zvishoma   ☐ 2

c) Zvinokanganisa zviri pakati nepakati   ☐ 1

d) Zvinokanganisa zvikuru   ☐ 0

9.   Kangani kamunoshandisa chinhu chinokuyeuchidzai kunwa mishonga?

a) Nguva dzose   ☐ 3

b) Nguva zhinji   ☐ 2

c) Apo neapo   ☐ 1

d) Handishandisi   ☐ 0

10.   Kangani kamunodya zvikafu zvinotevera: chikafu chakagadzirwa chinouya chiri mumagaba, machipisi, nzungu dzine munyu, matemba, masoseji, chimukuyu chine munyu, maputi ane munyu, usavi hune munyu wakadarikidza mwero?

a) Nguva dzose   ☐   0

b) Nguva zhinji ☐ 1

c) Apo neapo ☐ 2

d) Handina ☐ 3

11. Kangani kamunowedzera munyu muusavi patafura?

a) Nguva Dzose ☐ 0

b) Nguva zhinji ☐ 1

c) Kashoma ☐ 2

d) Handiwedzeri ☐ 3

12. Kangani kamunotarisa zvakanyorwa pamagaba echikafu chakagadziridzwa kuti muone huwandu hwemunyu?

a) Nguva dzose ☐ 3

b) Nguva zhinji ☐ 2

c) Apo neapo ☐ 1

d) Handizvitarisi ☐ 0

13. Kangani kamunotarisa kuwedzera kwehuremu hwenyu kunoratidza kusaraswa kwemvura kwakakwana pasvondo?

a) Mazuva ose ☐ 7

b) Katanhatu ☐ 6

c) Kashanu ☐ 5

d) kana ☐ 4

e) Katatu ☐ 3

f) Kaviri ☐ 2

g) kamwechete ☐ 1

h) Handitarisi ☐ 0

14. Ndezvipi zviratidzo zvamakamboita muchirwere chemoyo chinogara kwenguva ndefu?

a) Kuzarirwa ☐ 1

b) Kurukutika kunoramba kuchiwedzera ☐ 1

c) Kuzvimba (makumbo, dumbu, kumeso) ☐ 1

d) Chikosoro chitsva ☐ 1

e) Kurova kwehana kwakanyanya ☐ 1

f) Kutanga kurasa mvura usiku zvausingasiiti ☐ 1

g) Mabayo muchipfuva ☐ 1

h) kuwedzera kwehuremu munguva pfupi ☐ 1

15. Kangani kamunotsvaga rubetsero rwenyanzvi dzezveutano Kuti mukurumidze kurapwa kana zviratidzo zvinotevera zvatadza kugadzikana?

	Nguva dzose	Nguva zhinji	Kashoma	Handiendi kusvika zviratidzo zvaisa upenyu panjodzi
a)kuwedzera kwehuremu kunodarika makirogiramu maviri pasvondo				
b)Marwadzo muchipfuva				

c)Kurova kwehana zvakapfuuridza				
d)Kuzarirwa				
e)Kuneta kunoramba kuchiwedzera				
	3	2	1	0

16.   Munoita maekisesaizi kana mabasa anotevera kangani pasvondo?

	Katatu kana kupfuura	kaviri	kamwechete	handiiti
a)Kurima mubindu				
b)Kufamba				
c)Kutuhwina				
d)Basa remumba				
e)Kurima mumunda				
	3	2	1	0

17.   Munomira kuita maekisesaizi kana zviitwa zviri pamusoro kana zvaita sei?

a) Kuzarirwa kwave kutadzisa kutaura mutsara uchipera ☐ 1

b) Kunzwa dzungu ☐ 1

c) Mabayo muchipfuva ☐ 1

d) Kuneta kwakanyanyisisa ☐ 1

e) Kudikitira kwakanyanyisisa ☐ 1

18.   Kangani kamuzvipa nguva yekuzorora masikati pasvondo?

a) Zuva nezuva ☐ 7

b) mazuva matanhatu ☐ 6

c) Mazuva mashanu ☐ 5

d) Mazuva mana ☐ 4

e) Mazuva matatu ☐ 3

f) mazuva maviri ☐ 2

g) Zuva rimwechete ☐ 1

h) Handizorori ☐ 0

19.   Ndezvipi pane zvinotevera zvinokukanganisai kuzvichengetedza sezvakatarwa?

a) Kusaziva ☐

b) Kukanganwa kunwa mishonga ☐

c) Kunetseka nekubva pamba wanwa mishonga yekurasa mvura ☐

d) Kumuka usiku ndichirasa mvura ☐

e) Kushaya nguva kana simba rekuita basa ☐

f) Kutadza kubika ☐

g) Kushaya chikafu chinofanira kudyiwa ☐

h) Kudokwairira zvikafu zvisingafaniri ☐

i) Kudhura kwemishonga ☐

j) Matambuziko pakufamba chipatara chiri kure ☐

k) Kunzwa kuremerwa nekutsamwiswa neurwere ☐

NDINOKUTENDAI NOKUPINDA KWENYU MUCHIRONGWA

APPENDIX C

Consent Form

RE: RESEARCH TITLE: THE RELATIONSHIP BETWEEN SELF-CARE PRACTICES AND READMISSIONS AMONG ADULT PATIENTS WITH CHRONIC HEART FAILURE

My name is Ancia Manwere. I am a Masters in Nursing student at the University of Zimbabwe College of Health Sciences. I am doing a study on the above mentioned topic.

I am requesting you to participate in this study. The information obtained from this study will be treated as confidential and no one else besides the investigator will have access to it. Codes will be used instead of names to ensure confidentiality. The interview will lasts approximately 20 minutes and you will be free to withdraw from the interview at any point during the interview. You are also free to decline to participate in this interview and your decision will not affect the quality of care given to you in this department by health care providers.

Participating in this study might help you gain more knowledge about self care practices in chronic heart failure. You will also have contributed to the generation of new knowledge on self-care practices and readmissions in chronic heart failure. The information obtained will positively influence self-care programs targeted at chronic heart failure patients

There is minimum risk in this study, you might have psychological trauma as you will be asked to recall when you were diagnosed with chronic heart failure. You

will also be asked to recall how many times you have been admitted into a health care facility with heart failure.

For any queries pertaining to this study you can contact me during the week through the University of Zimbabwe, College of Health Science, Department of Nursing Science, P. O Box A178, Avondale, Telephone 791631 ext 2221.

I have read (or this consent form has been read to me) and I have understood this consent form and voluntarily consent to participate in this study

………………………… ……………………...

Subject's signature   Date

…………………………. …………………….

Interviewer's signature   Date

APPENDIX D

GWARO ROKUBVUMA KUPINDA MUTSVAGIRIDZO

HUKAMA PAKATI PEZVINOITWA PAKUCHENGETEDZA HUTANO NEKUDZORERWA PAMUBHEDHA MUCHIPATARA KWEVANHU VANORWARA NECHIRWERE CHEMOYO CHINOGARA KWENGUVA NDEFU

Zita rangu ndiAncia Manwere. Ndiri mudzidzi weYunivhesiti yeZimbabwe ari kudzidza zveukoti. Ndiri kuongororawo hukama huri pakati pezvinoitwa nevane chirwere chemoyo chinogara kwenguve refu nekudzorerwa kwavo muchipatara. Ndinokumbirawo kuti munge muri muchirongwa ichi. Umbowo hwandichawana kubva kwamuri hakuna mumwe achazohuziva kunze kwangu ini ndiri kuhutora. Handishandise mazita enyu asi ndichashandisa makodhi. Ndichakubvunzai mibvunzo kwenguva ingaita makumi maviri uye makasununguka kubuda kana kuramba kupa umbowo panguva ipi zvayo uye hazvikanganisi marapirwo enyu pano.

Kuva kwenyu muchirongwa ichi kuchabatsira kuwana hombowo hutsva maererano nekuzvichengetedza nechirwere chemoyo chinogara kwenguve refu. Humbowo huchawanikwa huchabatsirazve kuvanduza zvirongwa zviri maererano nekuzvichengeta kwevanhu vane chirwere chemoyo chionogara kwenguva refu.

Hakuna kukuvara kwakanyanya kwamungaite muchirongw ichi asi munogona kuva nekushushikana mupfungwa nekuti muchabvunzwa mibvunzo ine chekuita nepamakatanga kuonekwa kuti mune chirwere chemoyo chinogara kwenguva refu. Muchabvunzwazve zvamunoita pakuzvichengeta uye munotarisirwa kurangarira kuti makadzorerwa muchipatara kangani nechirwere chemoyo chinogara kwenguva refu.

Makasunanguka kubvunza mutori wehumbowo chero ipi nguva kana pane zvamusinganzwisisi. Ndinowanikwa pakati pesvondo pakero inoti: University of Zimbabwe, College of Health Sciences kubato ravanamukoti, P.O. Box A178 Avondale, Harare. Runhare 791631 ext 2221.

Ndaverenga (ndaverengerwa) ndikanzwisisa gwaro rino zvekare ndinobvuma kuve muchirongwa ichi.

…………………………………   …………………………

Saini yemurwere   Zuva

…………………………………   .. ………………………..

Saini yemuvhunzi   Zuva