HOME CARE NURSE PRACTITIONER KNOWLEDGE OF SELF-CARE MANAGEMENT IN PATIENTS WITH HEART FAILURE

by

Mia Nicole Saenz

Copyright © Mia Nicole Saenz 2016

A DNP Project Submitted to the Faculty of the

COLLEGE OF NURSING

In Partial Fulfillment of the Requirements
For the Degree of

DOCTOR OF NURSING PRACTICE

In the Graduate College

THE UNIVERSITY OF ARIZONA

2016
As members of the DNP Project Committee, we certify that we have read the DNP Project prepared by Mia Nicole Saenz entitled “Home Care Nurse Practitioner Knowledge of Self-Care Management in Patients with Heart Failure” and recommend that it be accepted as fulfilling the DNP Project requirement for the Degree of Doctor of Nursing Practice.

Luz M. Wiley, DNP, APRN-BC  
Date: November 14, 2016

Christy L. Pacheco, DNP, FNP-BC  
Date: November 14, 2016

Gloanna Peek, PhD, CPNP  
Date: November 14, 2016

Final approval and acceptance of this DNP Project is contingent upon the candidate’s submission of the final copies of the DNP Project to the Graduate College.

I hereby certify that I have read this DNP Project prepared under my direction and recommend that it be accepted as fulfilling the DNP Project requirement.

DNP Project Director: Luz M. Wiley, DNP, APRN-BC  
Date: November 14, 2016
STATEMENT BY AUTHOR

This DNP Project has been submitted in partial fulfillment of requirements for an advanced degree at The University of Arizona and is deposited in the University Library to be made available to borrowers under rules of the Library.

Brief quotations from this DNP Project are allowable without special permission, provided that accurate acknowledgment of source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part may be granted by the head of the major department or the Dean of the Graduate College when in his or her judgment the proposed use of the material is in the interests of scholarship. In all other instances, however, permission must be obtained from the author.

SIGNED: Mia Nicole Saenz__________________
ACKNOWLEDGMENTS

I would like to thank those special individuals who have supported, encouraged, and helped me succeed in my doctoral program.

To Dr. Wiley for your encouragement, support, and dedication throughout the last two years. You have been an incredibly patient and supportive mentor throughout the entire process. I am extremely grateful for your dedication to my success as a graduate student.

To Dr. Pacheco and Dr. Peek for sharing your knowledge, offering your feedback, and helping me reach my goals. You have all been a pleasure to work with.

To Mom and Dad for setting the bar high. Thank you for believing in me, supporting me, and encouraging me to get through it. I could not have done it without your unconditional love, guidance and support. Thank you for putting your life on hold so that I could reach my goals!

To my older brother Curtis for listening to me gripe day in and day out about homework assignments, clinical days, and long work weeks. You never missed a phone call or a text message and you kept me on track. We finally did it!

To Victor and Roberta for supporting our decision to make this dream a reality. Thank you for watching our girls so that I could complete homework assignments and complete my clinical hours. We are lucky to have you!

Finally, to my husband for allowing me to follow my dreams and reach my goals. You have been there for me and the girls through this entire process. Thank you for believing in me, listening to me, picking me up, and encouraging me every step of the way. I would have never made here it without you!
DEDICATION

I would like to dedicate this to my children Sophia Rae, Ava Grace, and Ella Rose. You have been so understanding and forgiving of my absence during this time. The three of you bring so much joy and laughter into my life, I could not be more excited to share this major accomplishment with each of you. I love you to the moon and back!
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>8</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>9</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>10</td>
</tr>
<tr>
<td>Background Knowledge</td>
<td>10</td>
</tr>
<tr>
<td>Pathophysiology</td>
<td>10</td>
</tr>
<tr>
<td>Management</td>
<td>11</td>
</tr>
<tr>
<td>Home Care and the Nurse Practitioner Role</td>
<td>12</td>
</tr>
<tr>
<td>Local Problem</td>
<td>13</td>
</tr>
<tr>
<td>Purpose</td>
<td>14</td>
</tr>
<tr>
<td>Stakeholders</td>
<td>15</td>
</tr>
<tr>
<td>Study Question</td>
<td>16</td>
</tr>
<tr>
<td>FRAMEWORK AND SYNTHESIS OF EVIDENCE</td>
<td>16</td>
</tr>
<tr>
<td>Theoretical Framework</td>
<td>16</td>
</tr>
<tr>
<td>Key Concepts</td>
<td>18</td>
</tr>
<tr>
<td>Heart Failure</td>
<td>18</td>
</tr>
<tr>
<td>Home Care</td>
<td>18</td>
</tr>
<tr>
<td>Diet Modification</td>
<td>19</td>
</tr>
<tr>
<td>Weight Monitoring</td>
<td>19</td>
</tr>
<tr>
<td>Physical Activity</td>
<td>19</td>
</tr>
<tr>
<td>Medication Regimens</td>
<td>20</td>
</tr>
<tr>
<td>Signs and Symptoms of Exacerbation</td>
<td>20</td>
</tr>
<tr>
<td>Prompt Follow-up Care</td>
<td>20</td>
</tr>
<tr>
<td>Synthesis of Evidence</td>
<td>21</td>
</tr>
<tr>
<td>Nurse Practitioner Heart Failure Knowledge</td>
<td>22</td>
</tr>
<tr>
<td>Home Care Interventions</td>
<td>23</td>
</tr>
<tr>
<td>Key Components in Heart Failure Management</td>
<td>24</td>
</tr>
<tr>
<td>Patients’ Perceptions of Self-Care Management</td>
<td>25</td>
</tr>
<tr>
<td>Strengths and Weaknesses</td>
<td>26</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS – Continued

**METHODS** .................................................................................................................................................. 26
**Design** ..................................................................................................................................................... 26
**Ethical Considerations** ............................................................................................................................... 27
  - Respect for Persons .................................................................................................................................. 27
  - Beneficence .............................................................................................................................................. 27
  - Justice ..................................................................................................................................................... 28
**Setting** ..................................................................................................................................................... 28
**Participants** .............................................................................................................................................. 29
**Data Collection** ....................................................................................................................................... 29
**Data Analysis** .......................................................................................................................................... 30
**Projected Budget** .................................................................................................................................... 31
**RESULTS** .................................................................................................................................................. 31
**Sample Characteristics** ............................................................................................................................. 31
**Evaluating Knowledge of Heart Failure Self-Care Management Topics** ................................................. 31
**DISCUSSION** .......................................................................................................................................... 34
**Study Limitations** .................................................................................................................................. 39
**CONCLUSION** ......................................................................................................................................... 39

**APPENDIX A** RESEARCH TABLES ............................................................................................................. 41
**APPENDIX B** SURVEY COVER LETTER ..................................................................................................... 48
**APPENDIX C** HEART FAILURE SURVEY ..................................................................................................... 50
**APPENDIX D** TWO-WEEK SURVEY REMINDER ....................................................................................... 55
**APPENDIX E** PROJECTED BUDGET ........................................................................................................... 57

**REFERENCES** ............................................................................................................................................. 59
LIST OF TABLES

TABLE 1. Demographic Characteristics of Home Care NPs Completing Survey on Heart Failure (HF) Knowledge..................................................................................................................32

TABLE 2. Correct Responses to Individual Questions.................................................................35
Objective: The purpose of this project is to explore the depth of HF self-care management knowledge of home care NPs that will help improve patient HF management in New Mexico.

Methods: A quantitative descriptive study design was used. Home care NPs (n=6) were recruited from the New Mexico Nurse Practitioner Council to participate in a 22-item survey on HF self-care management topics administered to participants via email.

Results: Home care NPs’ scores demonstrated at 74% knowledge base in overall heart failure self-care management education topics. NPs scored the lowest (0% answered correctly) in recognition of signs and symptoms of a worsening condition, sodium restrictions (50% answered correctly), weight gain (50% answered correctly), and hospital follow-up (50% answered correctly). Limitations of the study include a small sample size with inability to generalize results.

Conclusions: Findings suggest that home care NPs may not be sufficiently knowledgeable in evidence-based HF self-care management education topics. Development of educational programs may be warranted to aid in the management of HF patients ultimately resulting in quality education for the patient. Further research is warranted to identify specific deficits and whether educational programs would enhance and maintain home care NPs knowledge of HF self-care management education.
INTRODUCTION

Heart failure (HF) is a progressive condition that occurs when the muscle of the heart is not able to pump ample amounts of blood to meet the requirements of the body for blood and oxygen (American Heart Association, 2015). It can be described as a chronic disease that will lead to frailty and death and continues to be a chief public health concern for the United States (US). HF affects 5.8 million Americans; 670,000 are diagnosed each year, and 300,000 will die from the disease (National Heart Lung and Blood Institute, 2014). HF is recorded as the principal diagnosis for more than 1 million hospitalized patients, and at least half of these patients discharged from a facility with a HF diagnosis will be readmitted within six months (Nesbitt et al., 2014). Medical care costs are estimated to rise from $273 billion to $818 billion by the year 2030 for heart disease alone (American Heart Association, 2011). HF decreases health-related quality of life substantially, particularly patient physical functioning and energy. Health-related quality of life deficiencies after discharge from a hospital stay is a strong predictor of rehospitalization and mortality (Yancy et al., 2013). Although healthcare organizations have made progression in the quality of the acute and chronic management of HF, gaps in the current body of knowledge still exist regarding the present interventions to improve the transition of care from an inpatient care facility back to home for patients with HF (Feltner et al., 2014).

Background Knowledge

Pathophysiology

Heart failure is a multi-faceted clinical syndrome that results from the heart’s inability to pump enough blood to meet the demands of the peripheral tissues (Keller et al, 2015). Heart failure can result from systolic dysfunction in which the ventricle is not able to eject sufficient amounts of blood. Diastolic dysfunction occurs when the ventricle cannot fill with adequate
amounts of blood. Although there are several etiologies of HF, ischemic heart disease and hypertension are two of the most common underlying causes (Keller et al., 2015). HF triggers hemodynamic changes, neurohormonal stimulation, vasoactive substance secretion, and myocardial remodeling which all have systemic effects (Keller et al., 2015). Common signs and symptoms include shortness of breath, fatigue, ankle swelling, elevated jugular venous pressure, pulmonary crackles, and a displaced apex beat.

**Management**

The goal of managing patients with heart failure is to improve quality of life by minimizing symptoms, preserve or increase patient’s ability to perform activities of daily living (ADLs), decrease morbidity and prolong survival (DeMartinis, Kent, Uphold, 2013). Understanding how to cope with heart failure and its symptoms is an overwhelming task for most patients because it requires a complex medical regimen with multiple lifestyle changes. Patients must learn how to be proficient with their self-management skills incorporating stringent diet modifications, vital sign monitoring, daily activities, and medication regimens (Hall, et al., 2014).

The Joint Commission on Accreditation of Health Organizations (JACHO) has recognized six key components that should be included in the education of heart failure self-management strategies. The six areas of concern should include: diet modification, physical activity, medication regimens, signs and symptoms of deteriorating state, and prompt follow-up care (JACHO, 2011).

Numerous care transition models have been assessed in their capacity to transition patients who are chronically ill including those with heart failure. Models such as the Transitional Care Model (TCM) incorporate a team approach, led by an advanced practice nurse,
that is evidence-based and effective in improving patient care (Tingley, Dolansky, & Walsh, 2015). The Care Transitions Intervention is a four-week hospital to home program that uses trained lay community workers as a transition coach and has reduced rehospitalization rates at the 30- and 90-day mark (Tingley, Dolansky, & Walsh, 2015). Reengineered Discharge (project Red) was a quality improvement project that focused on discharge planning including coordination, communication, early follow up and education (Tingley, Dolansky, & Walsh, 2015). This project also revealed a decrease in hospital utilization by those patients in the intervention group. The Interventions to Reduce Acute Care Transfers (INTERACT) was developed to focus on transfers from a nursing home to hospital, focusing on resources that can be used to reduce avoidable transfers (Tingley, Dolansky, & Walsh, 2015). These evidence-based care models have shown encouraging results in reducing readmissions in the short, intermediate, and long-term realm (Tingley, Dolansky, & Walsh, 2015). Although similar in concept, each have varying methods of delivering patient instruction, early follow-up, disease management, superior assessment skills, and improved discharge planning.

**Home Care and the Nurse Practitioner Role**

Home care providers are involved in providing skilled nursing services along with therapeutic services such as physical therapy, occupational therapy, speech therapy, and home health aide services to homebound patients (Centers for Medicare and Medicaid Services [CMS], 2013). A physician or nurse practitioner (NP) can supervise services rendered by a home care provider. Although HF patients are often referred for home care after hospital discharge, they continue to have rehospitalization rates of 15% in the first 60 days of initiating home care and 25-50% in the following 3-6 months (Delaney et al., 2011). With most HF self-management
occurring in the home, home care NPs are in an exclusive position to influence superior outcomes, reduce hospitalizations, and improve patient quality of life.

In a study conducted by Lowery et al., (2012) NP-led models had significantly fewer all cause admissions and mortalities than the primary care model. There was only an 8% mortality rate in the NP group and a 17.7% in the control group. Two similar studies were conducted in a Texas hospital and at Brigham and Women’s Hospital. Patients who participated in an NP led program had readmission rates that remained at or below 15% compared to 19%-23% prior to the program (Carey et al., 2013; Sauris et al., 2011). Although current research suggests the NP role has been successful in managing HF readmissions, there is little research to substantiate the depth of HF education knowledge displayed specifically from home care NPs. The average length of stay for home care patients is 44 days as opposed to a hospital stay of 3-5 days with a primary focus of recovery, which sets the stage for a “teachable moment” (Delaney et al., 2011). Identifying the HF education topics learning needs of home care NPs can help improve their teaching capabilities and ultimately improve patient outcomes (Sterne, Grossman, Migliardi, & Swallow, 2014).

**Local Problem**

New Mexico’s estimated population is 2,098,380 with a projected population to reach 2,613,332 by 2030. New Mexico’s population is comprised of 46.4% Hispanic, 41.2% White, 8.8% are American Indian or Alaska Native, 2.1% are African American, and 1.5% is Asian or Pacific Islander (New Mexico Department of Health, 2014). The rate of unplanned readmission rates for HF patients in the three largest cities of New Mexico is about 22.0% and the death rate for HF patients is worse than the national average at 11.6% (CMS, 2016). New Mexico is expected to double their 65 or older population by 2030 and will have the fourth largest 65 or
older population percentage in the nation (Administration on Aging, 2011). Eighteen of the 33 counties in New Mexico can be defined as health care professional shortage areas (HPSA), which is defined as not having enough medical staff to properly serve a geographic area (University of New Mexico, 2016). Understanding how NPs can aid in managing patients with chronic diseases such as HF will be a critical component in improving patient transitions in the state of New Mexico.

With CMS decreasing payments to hospitals for disproportionate readmissions related to HF, hospitals are incentivized to improve programs and collaborate with community partners to combat this issue (CMS, 2013). According to the Agency for Healthcare Research and Quality (AHRQ) (2015), the type and the quality of care that they receive can decrease a patient’s risk of hospital readmission. Therefore, it is imperative that home care NPs possess the HF knowledge needed to teach patients the self-care management skills they will need to be successful after their hospital admission. Heart failure education that is meaningful will have to go beyond simple teaching and should incorporate approaches to help patients expand their skills, mastery and confidence in their own self care management (Ramusson, Flattery, & Baas, 2015).

**Purpose**

The purpose of this project is to explore the depth of HF self-care management knowledge of home care NPs that will help improve patient HF management in New Mexico. The results could ultimately help improve patient outcomes, decrease healthcare associated costs, and reduce hospital readmission related to HF. The data can be gathered through surveys that address the knowledge base of home care NPs in areas that are specific to HF self-care management. Key topics of HF education include diet modification, weight monitoring, physical activity, medication regimes, signs and symptoms of a deteriorating state, and prompt follow up
care as described by JACHO. Analysis of this data will assist in identifying areas in which home care NPs are proficient or deficient in HF self-care management topics needed to be successful in the management of their patients in the home care setting.

**Stakeholders**

Identification of key stakeholders is critical in the development of this project. There are several individuals who will be affected by the outcomes of this project. Patients diagnosed with HF, home care registered nurses, home care agencies; NPs, healthcare providers and hospitals may be affected by the results of this project. Although the project is geared to identifying the HF self-care management knowledge of home care NPs, the information collected can help improve patient outcomes, agency outcomes, hospital outcomes, while improving quality of care, and ultimately decreasing hospital readmissions and healthcare associated costs.

The outcome of this DNP project will be influenced by the participation of the home care NPs. Their support of this project is essential, as their knowledge will help guide project outcomes, which could lead to increased NP and patient HF knowledge of self-care management topics. Strategies that will be used to help make this project successful include the early inclusion of key individuals and clear communication of the project’s purpose and its goal (Moran & Burson, 2014). It will also be necessary to identify individuals who may have a negative influence or the barriers that could have an impact on the project so that these obstacles can be overcome (Moran, 2014). This may include NPs who do not feel this type of assessment is not necessary.
Study Question

Do NPs working in the home care setting have adequate understanding of evidence-based HF self-care management education topics including: diet modification, physical activity, medication regimens, signs and symptoms of exacerbation, and prompt follow-up care?

FRAMEWORK AND SYNTHESIS OF EVIDENCE

Theoretical Framework

The theoretical framework chosen for this project is the Knowledge-to-Action Process Framework (KTA) (Center of Knowledge Translation for Disability and Rehabilitation Research [KTDRR], 2013). This conceptual model was developed to make research knowledge accessible to several stakeholders, including but not limited to, practitioners, policymakers, patients and the public (KTDRR, 2013). The two main components of the model are knowledge creation and action, with several phases in between. The KTA is a complex, dynamic process with no explicit restrictions between the two elements and their stages (K.T. Clearinghouse, 2014). The phases in the action component as well as the knowledge-to-creation component can occur sequentially or simultaneously and may lend influence to one another (Field, Booth, Ilott, & Gerrish, 2014). The KTA framework places an emphasis on collaboration between the knowledge producers and users throughout the process (Graham et al., 2006). This model was chosen for this project because it outlines a process that is useful for applying knowledge to practice with the intent of improving patient outcomes and efficacies of the health care system.

The starting point of the model is to identify the knowledge needs and relevant stakeholders of the project (K.T. Clearinghouse, 2014). Strategies used to determine the needs assessment are dependent on the intent of the assessment, type of data, available resources, and whether the needs are objectively or subjectively measured (KTDRR, 2013). The needs
assessment can transpire from the viewpoint of the population, the provider organization or the health care provider (KTDRR, 2013). Because poor outcomes and increased rehospitalization rates in patients with HF who have home care services continue to be problematic, the following question was developed: Do NPs in the home care setting have the appropriate understanding of the six key components, including diet modification, weight monitoring, physical activity, medication regimens, signs and symptoms of deteriorating state, and prompt follow up care that should be included in the education of a HF patient? Once the knowledge need is identified the next step in the model can be accomplished.

The next step in the model is used to adapt the knowledge into a local context (K.T. Clearinghouse, 2014). Identifying the NPs view and knowledge base of the key concepts that have been pre-determined by JACHO and the Heart Failure Society of America (HFSA), as necessary components of education for a patient with HF can help to tailor a standard of care for HF patients in the home care setting. Identification of a survey addressing the six key components of HF education according to JACHOs and HFSAs recommendations, will help gather the data needed to determine the knowledge base of the home care NP in HF self-care management education. An organization may be more accepting and compliant with the standard of care if it is tailored to their specific needs (K.T. Clearinghouse, 2014). Although recommendations regarding the education of HF patients have been determined, standardization of these programs continues to be a challenge. Once the data has been collected the next step involves the identification of barriers to the use of knowledge.

Barriers to knowledge need to be evaluated prior to the implementation of new knowledge (KTDRR, 2013). Examples to the barriers of knowledge may include unfamiliarity with key concepts, enthusiasm or incentives, lack of relevance, poor expectations or external
barriers such as inadequate time, understanding and/or support from the organization (Graham, et al, 2006). The survey will address whether or not there may be a lack of familiarity with key concepts needed to provide sufficient education to patients with HF in their home. Identifying the barriers NPs face will help develop a standard of care with consideration to these obstacles. Once the data is gathered a proposal for a specific intervention can be compiled.

The final steps of the KTA model includes implementation of the intervention, monitoring the knowledge use, evaluating outcomes, and sustainability (K.T. Clearinghouse, 2014). Although, this step of the model will not be used for the purposes of this DNP project, the data that is collected will provide the necessary information to aid in the final steps of this model. The intent of the project is to gather and disseminate data that can aid home care agencies in developing HF education programs that may help in decreasing rehospitalization rates and improve health outcomes in patients with HF.

**Key Concepts**

**Heart Failure**

HF is a complex disorder that impairs the ability of the ventricles of the heart to adequately fill up with blood or pump adequate amounts of blood to the remainder of the body (American Heart Association, 2015). Chief HF indicators include fatigue, dyspnea, and fluid retention (American Heart Association, 2015).

**Home Care**

Home care encompasses a wide range of health and social services that are delivered in the home. These services include medical, nursing, social, therapeutic services (physical, occupational, and speech therapy), and assistance with activities of daily living (CMS, 2013). Services can be rendered to homebound patients who are recovering, disabled, and are
chronically or terminally ill (CMS, 2013). A physician or NP can supervise home care services delivered to patients.

**Diet Modification**

Patients should be given precise education regarding a dietary sodium restriction of 2-3 grams per day (HFSA, 2010). Further restriction (less than 2 grams daily) should be considered in patients with moderate to severe HF. Clinicians should provide patients with the daily target of sodium intake and the information and skills required to reach that target. Limitation of daily fluid intake (less than 2 liters) for all patients with hyponatremia (serum sodium less than 130mEQ/L) is recommended (HFSA, 2010). It should also be contemplated for all patients demonstrating fluid retention that is problematic, in spite of sodium limitations and diuretic use (HFSA, 2010).

**Weight Monitoring**

Patients should be taught to monitor for signs of fluid overload or edema once they have been discharged from a facility (HFSA, 2010). Patient should be weighed on the day of discharge to determine baseline weight. Patients should be encouraged to weigh themselves at the same time every day. Monitoring daily weight will help patients track unwanted fluid retention. A weight gain of greater than two pounds in one day, or four pounds in one week, will require further evaluation by a health care provider (HFSA, 2010).

**Physical Activity**

Patients with HF should be evaluated for exercise tolerance to establish suitability for exercise training (HFSA, 2010). If a patient is safe to exercise, training should be recommended to enable comprehension of heart rate ranges and appropriate levels of training. The ideal goal is to increase the duration and intensity of exercise to reach thirty minutes of sufficient
activity/exercise five days per week (HFSA, 2010). An exercise routine should also include warm up and cool down exercises. It improves cardiac output, decreases peripheral vascular resistance, and creates positive changes in skeletal muscle metabolism and configuration (HFSA, 2010).

**Medication Regimens**

Specific medications related to HF management will not be discussed for the purpose of this project, however compliance and ability to follow medication regimen will be addressed. Patients should be encouraged to demonstrate knowledge of medication names, doses, and rationales of each (HFSA, 2010). Ideally, patients should be able to identify the desired method of tracking medication doses, refill plans, and what to do if a medication dose is missed (HFSA, 2010).

**Signs and Symptoms of Exacerbation**

Education regarding specific signs and symptoms of deteriorating HF state should be included. This includes symptoms of increasing fatigue, shortness of breath with usual activities, persistently fast or irregular heartbeat, dyspnea at rest, nocturnal dyspnea, orthopnea, or edema (HFSA, 2010). An action plan should be identified and patient should be encouraged to call provider with worsening symptoms or 911 with emergent symptoms. Emergent symptoms include chest pain that last longer than 15 minutes with no relief from Nitroglycerin, severe persistent shortness of breath, or fainting (HFSA, 2010).

**Prompt Follow-up Care**

It is recommended that patients follow up with their primary care physician and/or cardiologist within one week of discharge. Patients should receive individualized education and counseling from a team of nurses, physicians, dieticians, pharmacists and other health care
providers (HFSA, 2010). Patient education should begin within 1-2 weeks from discharge, should be continued for 3-6 months and should be re-evaluated periodically (HFSA, 2010).

The KTA theoretical framework will be used to help guide this project to ensure quality data collection and identification of deficient HF education knowledge areas in home care NPs. This information can be used to create a standard of care for patients with HF that are receiving home care education interventions. Identification of HF knowledge deficiencies can help strengthen a HF program and ultimately aid the NP in managing the care of complex patients.

**Synthesis of Evidence**

To gain a better understanding of the home care NP knowledge regarding HF education topics that affect the effectiveness of home care interventions, key topics included in HF education, and patients’ perceptions of self-care management in the home setting, a literature search was conducted using PubMed, Google Scholar, and CINAHL in March 2016. The following search terms were used: heart failure, home care, education, home care nurses, nurse practitioners, perception, and components of heart failure education. At least 600 articles were yielded with these search terms. Additional filters such as full-text and time frame of 10 years were applied. This narrowed the search to 200 articles related to nurses’ knowledge of HF management, effects of home care interventions in HF management, key components of home care interventions, and patients’ perceptions of self-care management with HF. Ten articles were retrieved that were applicable to the purpose of the project (Appendix A). The 10 articles selected had to include previous studies regarding HF knowledge in home care, home care interventions for HF patients, key components of HF education that are currently used, and patient and provider perceptions of home care interventions. The additional articles were excluded because they did not meet inclusion criteria.
**Nurse Practitioner Heart Failure Knowledge**

Three studies were found that addressed the knowledge foundation of nurses caring for patients with HF. However, current literature regarding the NP knowledge of HF self-care management strategies is lacking, with most of the data focusing on home care RNs. The first study conducted by Delaney, Apostolidis, Lachapelle, & Fortinsky (2011) was a cross-sectional survey design used to determine home care nurses’ knowledge of evidence-based education topics that should be taught to HF home care patients. This study reports that there was 78.9% knowledge base in overall HF education principles, suggesting that there is room for improvement in educational programs for these nurses. Limitations of the study include a small sample size with predominantly white participants, thus making it difficult to generalize the results (Delaney, Apostolidis, Lachapelle, & Fortinsky, 2011).

The second study used a pretest-posttest design that included an education intervention. The objective of the study was to evaluate the nurses’ knowledge of heart failure topics before and after intervention as well as evaluating 30-day readmission rates before and after the educational intervention (Sterne, Grossman, Migliardi, & Swallow, 2014). The data did reveal a statistically significant increase in the nurses’ posttest scores and a reduction in 30-day readmission rates (Sterne, Grossman, Migliardi, & Swallow, 2014). Nurses’ knowledge of evidence-based practice can impact patient outcomes as demonstrated by the reduction in readmission rates. Limitations of this study are similar to the first with a small sample size from a single institution, which makes it difficult to generalize to other hospitals and nurses (Sterne, Grossman, Migliardi, & Swallow, 2014).

The third article uses a quasi-experimental study design to assess nurses’ knowledge of HF self-care prior to, immediately after, and three months following the educational intervention.
based on evidence-based literature (Mahramus, Aragon, Frewin, Chamberlain, & Sole, 2014). The teach-back method was also taught and evaluated to determine how effective nurses are when using this method. Data reveals that there are significant knowledge deficits about worsening symptoms, fluid and blood pressure management, and medication regimens (Mahramus et al., 2014). The teach-back method was also a difficult task for nurses to master, requiring remediation and reinforcing of the content (Mahramus et al., 2014). Fortunately, scores did improve significantly after the educational intervention. These knowledge deficits can be detrimental for patients with HF and understanding areas that are lacking can aid in the development of educational opportunities. Understanding the NPs knowledge foundation will help to determine what areas can be improved so they can be viewed as an asset to the multidisciplinary team.

**Home Care Interventions**

This section focuses on the effects of home care interventions and how they have been successful in HF management. Echeverry, Lamb, and Miller (2015) conducted a quality improvement project to develop and test a solution for the poor outcomes experienced by older homebound adults with HF. An NP was devoted to see patients once per week who were homebound and had a diagnosis of HF. The data revealed a significant decrease in the number of hospitalizations from 88 the previous year to 9 within the three-month timeframe (Echeverry, Lamb, & Miller, 2015). This resulted in decreased healthcare costs and improved the patients’ overall health and well-being. This provides evidence of the impact NPs have in home care and on patient outcomes in those diagnosed with HF. Study limitations included the short time frame of three months versus one year and the study is limited to only those patients with HF.
In a prospective, quasi-experimental study conducted by Lowry et al., (2012) patients were divided to either a NP-led disease management intervention or the usual care in both a primary or tertiary setting to determine the effectiveness of the NP on resource utilization, readmissions, and decreased morbidity and mortality. The data revealed that the intervention group had significantly fewer HF and all-cause deaths and a lower mortality rate (Lowry et al., 2012). Limitations of this study include the lack of randomization and study population was recruited from the Veterans Health Administration making it difficult to generalize the results of the study to a greater population.

The third article investigates a home care model that uses the expertise of an NP to manage the home care program of a patient with HF. The intervention included home care visits that were made by NPs to cover education topics such as HF causes, sodium intake, fluid balance, diet, and activity (Bryant & Gaspar, 2016). Hospital admission rates and the Self-Care of Heart Failure Index pre and post intervention scores were captured detailed in the study. Findings did show a decrease in hospital admissions with a significant increase in the maintenance, management, and confidence of self-care related to HF management (Bryant & Gaspar, 2016). This data suggests that patients receiving HF education with logging tools and individualized counseling can have a positive impact on patient outcomes (Bryant & Gaspar, 2016). This study is limited by its small sample size and single setting, which makes it difficult to interpret these findings for a different population.

**Key Components in Heart Failure Management**

The next two reviews attempt to identify the key components of HF management. In a literature review conducted by Albert (2016), common themes of successful transition models were identified. Although, each study had a different approach to patient care common themes
emerged within each study. Coordinated medical care that is timely, thorough, and individualized reinforced by evidence-based education topics can increase quality of life and decrease hospital readmissions for patients with HF (Albert, 2016). These themes can aid in successful management of HF patients in the home if identified and understood by nurses.

The second review conducted by Jaarsma, Brons, Kraai, Luttik, & Stromberg (2012) identified 70 for their search. The data suggests that there continues to be a variety of methods used in home care for the management of HF. Although the review did not focus on the effectiveness of each method, it did reveal the need for standardization in home care. Common themes identified were similar to the first review and included a multidisciplinary approach with multiple education topics. Interestingly, of all 70 studies only seven reported inclusion of family members and caregivers despite recommendations that have been clearly stated in clinical guidelines.

**Patients’ Perception of Self-Care Management**

The last two articles are qualitative studies that are focused on identifying the differences in patients, caregivers, and clinicians’ perceptions of HF self-care management. In the first study conducted by Ahmad et al., (2016) there are similarities in the views of HF management tasks but quite a bit of variance in the perceptions regarding barriers to HF management and reasons for readmissions. Understanding these differences can aid in the development of strategies to reduce readmissions and improve self-care in patients with HF. The study conducted by Retrum et al., (2013) identified that patient experiences are highly heterogeneous, are not easy to categorize as preventable, and most often cannot be attributed to a single cause. Therefore, interventions should have a multifaceted approach, be systemic in nature, and include patients’
input (Retrum et al., 2013). Limitations of both studies include sample size and limited settings with limited diversity of patients.

**Strengths and Weaknesses**

Strengths of the literature reveals that evidence-based topics that are sufficiently understood can produce positive impacts on patient outcomes in those diagnosed with HF. Evidence regarding home care and HF education is emerging and novel information is being produced. However, there seems to be a lack on uniformity in the delivery methods of home care, the knowledge base of those delivering the education, and the knowledge base of NPs specifically. None of the studies that were mentioned took place in the southwest and most took place in large urban settings, thus making it more difficult to generalize the results. Further research is warranted to determine what areas of education is most lacking and how we can use this to standardize HF management in the home care arena.

**METHODS**

**Design**

This DNP project will use a quantitative descriptive study design. Descriptive studies are often used to evaluate the behaviors of healthcare professionals and/or systems. They can also be useful in delivering baseline data that can be utilized for practice improvement projects (Rouen, 2014). This type of project design is valuable in determining the characteristics or needs of a specific populace (Rouen, 2014). A non-experimental approach allows the researcher the ability to describe a phenomenon or predict a relationship (Tymkow, 2014). Once the data for this project is collected and analyzed it can then be translated into future quality improvement projects aimed at improving HF education standards for NPs providing home care services.
Before this DNP project begins, Institutional Review Board (IRB) approval from the University of Arizona will be obtained. The IRB approval process ensures that all safeguards are in place to protect the study participants, minimize risk, and maintain privacy (Polit & Beck, 2012). Permission to distribute the project HF survey via email to members of the New Mexico Nurse Practitioner Council (NMNPC) has been obtained.

**Ethical Considerations**

The three basic principles that should be considered while conducting research studies that involve human beings include: respect for persons, beneficence, and justice (U.S. Department of Health and Human Services [USDHHS], 1979). Inclusion of these three guiding principles aims to ensure that participants will be treated ethically, equally, and safely throughout the project.

**Respect for Persons**

Respect for persons is comprised of two major principles: the right to self-determination and protection for those individuals with diminished autonomy (USDHHS, 1979: Polit & Beck, 2012). Dissemination of a survey amongst home care NPs with a detailed explanation of the project allows them the opportunity to make an informed, voluntary decision regarding their participation (Polit & Beck, 2012). Participants are providing informed consent by agreeing to participate in the HF survey.

**Beneficence**

Beneficence, maximizing benefits while minimizing harm, is the second basic principle to be considered when conducting a study (USDDHS, 1979). Strategies should be developed to prevent, minimize, or avoid harm or discomfort, even if it is only temporary (Polit & Beck, 2012). Anonymity of the project participants is a specific strategy that will be used in this project.
to minimize harm while collecting the data. Although, the benefits of the data collected may not
be seen immediately, the goal is to provide data that can improve standards of care for HF
education in the home. Long-term the data collected is intended to be beneficial for the staff,
patients, providers, and home care agencies.

Justice

Justice, the third basic principle, requires researchers to distribute fair and impartial data
that includes the benefits and risks associated with the findings (USDHHS, 1979). Participation
selection should be solely based on study requirements and not population vulnerability (Polit &
Beck, 2012). The design of this project allows for equal participation of all individuals who meet
the inclusion criteria regardless of age, sex, race, or socioeconomic status. Benefits determined
by the data collected can be utilized by home care agencies to improve HF education for staff
providers and nurses.

Setting

This project will take place in New Mexico. Population is estimated at 2,085,109
residents with at least 15.3% of the population older than 65. (United States Census Bureau,
2016). New Mexico’s rate of unplanned readmissions for HF patients is about 22.0% and the
death rate for HF patients is worse than the national average at 11.6% (Centers for Medicare &
Medicaid Services [CMS], n.d.a). There are at least 1,089 certified NPs and clinical nurse
specialist practicing throughout the state (New Mexico Health Care Workforce Committee,
2014). NPs will be recruited via email to participate in the survey through the New Mexico
Nurse Practitioner Council. Administrators from each organization will email their members the
survey cover letter provided by the primary investigator describing the purpose, consent and the
link to the survey (Appendix B). Hence, access to confidential information such as participant name will not be required for the purpose of this project.

**Participants**

A convenience, non-randomized sample of NPs will be invited to participate in the project. Although convenience sampling is common in nursing research, data collected can be limited if sample size is too small. Therefore, it is critical that an adequate sample size be determined so the results of the study can be generalizable to the rest of the population (Polit & Beck, 2012). For the purposes of this DNP project, 575 surveys will be distributed via emailed with an anticipated return of at least 30 surveys. Inclusion criteria include: current certification as a family, adult, or acute/geriatric NP, current or previous employment in the home care setting involving patients aged 18 years or older, and currently practicing in New Mexico. Exclusion criteria include: NPs who have not worked in home care, NPs who do not provide care to patients aged 18 years or older, and who do not practice in New Mexico.

**Data Collection**

Data will be collected in the form of a survey to evaluate home care NP’s knowledge of self-care management HF topics. The survey will be formed into an online survey using the Qualtrics© survey software. Administrators of each organization will send out the link electronically to all eligible participants via the organizations listserv and email systems. Major data collection methods used in quantitative studies includes surveys, structured interviews, tests, and health indicators among many other tools (Polit & Beck, 2012; Tymkow, 2014)). A survey that contains seven demographic questions and 15 questions regarding the six HF education topics identified by JACHO and the HFSA as critical pieces of education for HF patients has been developed by the primary investigator (Appendix C). The six educational topics to be
addressed include: diet modification, weight monitoring, physical activity, medication regimens, signs and symptoms of exacerbation, and follow up care. Face and content validity was established by administering the survey to HF content experts including two cardiologists and three NPs who work primarily with HF patients until no further recommendations were made. This method of data collection will aid in determining the percentage of NPs that understand each component of evidence-based HF self-management education. This data can be used to identify areas of weakness that could potentially be improved upon with additional education.

The primary investigator will reach out the New Mexico Nurse Practitioner Council to provide a detailed explanation of the purpose of the study and obtain permission from organization administrators to email survey link to their members. Detailed instructions regarding who can complete the survey and how it should be completed will be included. Although there will be no incentives for completing the survey, NPs may benefit from gaining a better understanding of any areas identified as having a knowledge deficit. Organization administrators will distribute surveys via email. Four weeks will be allotted for the completion of surveys between September and October 2016. To ensure confidentiality, the completed surveys will be directly returned to Qualtrics® site. A reminder email will be sent via organization administrators two weeks after the initial survey distribution to encourage participation of those who have not yet responded (Appendix D).

**Data Analysis**

Data collected from the survey will be analyzed using SPSS statistical software. Descriptive statistics will be used to determine the frequency of correct responses and describe scores. Statistical analyses aid in organizing and converting the numbers that characterize the project outcome data into meaningful material (Rouen, 2014). The results of the project will be
disseminated through an executive summary. This document can be used to summarize the results of the study so that they can be easily shared with the participants and the project’s stakeholders. The executive summary can also be shared with the participating organizations so that they can make the results available to all members who are interested in the knowledge base of NPs regarding HF self-care education.

Projected Budget

Estimated expenses for this DNP project are anticipated to be about $150.00. The researcher anticipated costs for the SPSS software (Appendix E).

RESULTS

Sample Characteristics

A total of six home care NPs out of a possible 575 members of the New Mexico Nurse Practitioner Council participated in the survey for a response rate of 1.2%. Participants were exclusively female, 50% had a Master’s degree, 33.33% had a DNP, and 33.33% had a PhD. Participants were predominately FNPs (83.33%) and the remainder were AGNPs (16.67%). The majority of participants practiced in a rural setting (66.67%) while the remainder practiced in an urban setting. Participants had varied years of practice experience (< 1 year 16.67%, 1-5 years 33.33%, 6-10 years 16.67%, > 10 years 33.33%), and years of home care experience (> 1 year home care experience 50%, 1-5 years 16.67%, 6-10 years 16.67%, and >10 years 16.67%). The majority of participants manage patients with a HF diagnosis (daily 50%, weekly, 33.33%, few times per month 16.67%). Table 1 lists the demographic characteristics of the sample.

Evaluating Knowledge of Heart Failure Self-Care Management Topics

This segment of the survey was designed to evaluate the home care NP’s knowledge of self-care management HF topics. The first three questions asked about diet modifications and
were developed to identify NP knowledge regarding sodium intake, fluid restrictions, and low-sodium food options for patients with HF. Half of the respondents were able to correctly identify 24-hour sodium intake requirements for HF patients. The majority of participants (66.67%) were able to correctly identify fluid restrictions and all participants were able to identify low-sodium food options for patients with HF.

TABLE 1. Demographic Characteristics of Home Care NPs Completing Survey on Heart Failure (HF) Knowledge.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Female</td>
<td>6</td>
<td>100</td>
</tr>
<tr>
<td>Highest degree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.S.N.</td>
<td>3</td>
<td>50</td>
</tr>
<tr>
<td>D.N.P</td>
<td>2</td>
<td>33.33</td>
</tr>
<tr>
<td>PhD</td>
<td>1</td>
<td>16.67</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Specialty track</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FNP</td>
<td>5</td>
<td>83.33</td>
</tr>
<tr>
<td>AGNP</td>
<td>1</td>
<td>16.67</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Practice setting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>4</td>
<td>66.67</td>
</tr>
<tr>
<td>Urban</td>
<td>2</td>
<td>33.33</td>
</tr>
<tr>
<td>Years of practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;1</td>
<td>1</td>
<td>16.67</td>
</tr>
<tr>
<td>1-5</td>
<td>2</td>
<td>33.33</td>
</tr>
<tr>
<td>6-10</td>
<td>1</td>
<td>16.67</td>
</tr>
<tr>
<td>&gt;10</td>
<td>2</td>
<td>33.33</td>
</tr>
<tr>
<td>Years in home care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;1</td>
<td>3</td>
<td>50</td>
</tr>
<tr>
<td>1-5</td>
<td>1</td>
<td>16.67</td>
</tr>
<tr>
<td>6-10</td>
<td>1</td>
<td>16.67</td>
</tr>
<tr>
<td>&gt;10</td>
<td>1</td>
<td>16.67</td>
</tr>
<tr>
<td>Time spent with HF patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily</td>
<td>3</td>
<td>50</td>
</tr>
<tr>
<td>Weekly</td>
<td>2</td>
<td>33.33</td>
</tr>
<tr>
<td>Few monthly</td>
<td>1</td>
<td>16.67</td>
</tr>
<tr>
<td>Rarely</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

NP knowledge of patient weight monitoring recommendations were also explored.

Questions were intended to identify what home care NPs beliefs are in regards to an
unacceptable weight gain and how often patients should weigh themselves. While 100% of the participants correctly identified the need for monitoring weight daily, only half were able to correctly identify that a three-pound weight gain in 48 hours in a patient with HF should be reported to his or her health care provider immediately. Additionally, 83.33% of participants correctly identified the need to be concerned by weight gain in a patient with HF who is asymptomatic.

Physical activity has also been recommended by JACHO and HFSA as critical components of HF self-care patient education. Two questions were developed to identify NP knowledge regarding physical activity and exercise goals for patients with HF. All participants agreed that avoiding moderate physical activity was not acceptable and 66.67% of participants understand that thirty minutes of physical activity five days per week should be expected of patients with HF (HFSA, 2010).

Participants were then asked about the importance of medication regimens. Most (83.33%) participants correctly identified medications that should be avoided in patients with HF. In addition, all participants correctly identified that compliance with medication regimens does not guarantee that a patients HF condition will not progress.

Participants then answered questions regarding signs and symptoms of a worsening HF condition. The expectation was that participants would choose all options that point to signs and symptoms of HF exacerbations. More than half (66.67%) of participants viewed early satiety, nausea, and vomiting as symptoms that should be reported, and the majority (83.33%) viewed abdominal discomfort and leg swelling as a symptom that should also be reported. Weight gain of less than one pound in one day as a sign of worsening HF was incorrectly chosen by 16.67% of participants. However, none of the participants answered the question completely, as it
required them to choose all symptoms that were suggestive of a worsening heart failure condition. All participants correctly identified shortness of breath relieved by pillow propping as a reportable sign of a worsening condition. All participants correctly identified nocturnal dyspnea, increased shortness of breath, and increased fatigue as a worsening condition and cause for reporting their symptoms to their health care provider.

The last topic in the survey addressed follow-up care for patients with HF. Only 50% of participants were able to correctly identify that patients who have been hospitalized should have a follow up appointment with their provider within one week of discharge. Stable patients who are symptom free should follow up every 3-6 months, which was correctly identified by 66.67% of the participants.

**DISCUSSION**

Although there were a small number of participants, the data collected provided a wide range of responses. There was an 80-100% correct response rate in eight of the survey questions. Three of the questions resulted in correct responses at a rate greater than 60%, and four questions resulted in correct answers in less than 50% of participant responses. Overall, there was a 74% correct response rate for HF education topics, which indicates a good understanding of HF self-management topics. Table 2 lists each survey question and percentage of correct participant responses.
## TABLE 2. Correct Responses to Individual Questions.

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily (24 hours) sodium intake should be limited to:</td>
<td></td>
</tr>
<tr>
<td>1. 100mg to 500mg</td>
<td>0.0%</td>
</tr>
<tr>
<td>2. 500mg to 1000mg</td>
<td>0.0%</td>
</tr>
<tr>
<td>3. 1000mg to 1200mg</td>
<td>50.0%</td>
</tr>
<tr>
<td>4. 2000mg to 3000mg</td>
<td>50.0%</td>
</tr>
<tr>
<td>5. Greater than 3000mg</td>
<td>0.00%</td>
</tr>
<tr>
<td>Daily (24 hours) fluid restriction management should be limited to:</td>
<td></td>
</tr>
<tr>
<td>1. No more than 100ml</td>
<td>0.0%</td>
</tr>
<tr>
<td>2. Between 100ml and 500ml</td>
<td>0.0%</td>
</tr>
<tr>
<td>3. Less than 1000ml</td>
<td>16.67%</td>
</tr>
<tr>
<td>4. About 1500ml</td>
<td>66.67%</td>
</tr>
<tr>
<td>5. Fluid restriction does not matter</td>
<td>16.67%</td>
</tr>
<tr>
<td>Low sodium food options for heart failure patients may include:</td>
<td></td>
</tr>
<tr>
<td>1. Canned foods</td>
<td>0.0%</td>
</tr>
<tr>
<td>2. Deli meats</td>
<td>0.0%</td>
</tr>
<tr>
<td>3. Bacon burger</td>
<td>0.0%</td>
</tr>
<tr>
<td>4. Green vegetables</td>
<td>100.0%</td>
</tr>
<tr>
<td>Typically, a weight gain of ____ pounds in 48 hours is a concern and should be reported.</td>
<td></td>
</tr>
<tr>
<td>1. 1 pound</td>
<td>0.0%</td>
</tr>
<tr>
<td>2. 2 pounds</td>
<td>16.67%</td>
</tr>
<tr>
<td>3. 3 pounds</td>
<td>50.0%</td>
</tr>
<tr>
<td>4. 5 pounds</td>
<td>33.33%</td>
</tr>
<tr>
<td>If patient reports a weight gain of 4 pounds in 72 hours but is asymptomatic, they should not be concerned.</td>
<td></td>
</tr>
<tr>
<td>1. True</td>
<td>16.67%</td>
</tr>
<tr>
<td>2. False</td>
<td>83.33%</td>
</tr>
<tr>
<td>Patients should be expected to weigh themselves:</td>
<td></td>
</tr>
<tr>
<td>1. Daily</td>
<td>100.0%</td>
</tr>
<tr>
<td>2. Every other day</td>
<td>0.0%</td>
</tr>
<tr>
<td>3. Twice per week</td>
<td>0.0%</td>
</tr>
<tr>
<td>4. Only when short of breath</td>
<td>0.0%</td>
</tr>
<tr>
<td>Patients with HF should be instructed to avoid moderate activity/exercise.</td>
<td></td>
</tr>
<tr>
<td>1. True</td>
<td>0.0%</td>
</tr>
<tr>
<td>2. False</td>
<td>100.0%</td>
</tr>
<tr>
<td>An exercise goal for heart failure patients should include:</td>
<td></td>
</tr>
<tr>
<td>1. 15 minutes 3 days per week</td>
<td>16.67%</td>
</tr>
<tr>
<td>2. 30 minutes 5 days per week</td>
<td>66.67%</td>
</tr>
<tr>
<td>3. 60 minutes every day</td>
<td>16.67%</td>
</tr>
<tr>
<td>4. No exercise should be expected</td>
<td>0.0%</td>
</tr>
</tbody>
</table>
TABLE 2 - Continued

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following medication should be avoided in patients with HF for their generalized body aches and pains.</td>
<td></td>
</tr>
<tr>
<td>1. NSAIDs</td>
<td>0.0%</td>
</tr>
<tr>
<td>2. Cox-2 Inhibitors</td>
<td>0.0%</td>
</tr>
<tr>
<td>3. Acetaminophen</td>
<td>16.67%</td>
</tr>
<tr>
<td>4. A &amp; B</td>
<td>83.33%</td>
</tr>
<tr>
<td>5. None of the above</td>
<td>0.0%</td>
</tr>
<tr>
<td>Taking medications as prescribed will guarantee patients’ HF condition will not progress.</td>
<td></td>
</tr>
<tr>
<td>1. True</td>
<td>0.0%</td>
</tr>
<tr>
<td>2. False</td>
<td>100.0%</td>
</tr>
<tr>
<td>Signs of a worsening condition may include (circle all that apply):</td>
<td></td>
</tr>
<tr>
<td>1. Early satiety</td>
<td>66.67%</td>
</tr>
<tr>
<td>2. Nausea and vomiting</td>
<td>66.67%</td>
</tr>
<tr>
<td>3. Abdominal discomfort</td>
<td>83.33%</td>
</tr>
<tr>
<td>4. Weight gain &lt; 1 pound in one day</td>
<td>16.67%</td>
</tr>
<tr>
<td>5. Leg swelling</td>
<td>83.33%</td>
</tr>
<tr>
<td>If the patient experiences shortness of breath while sleeping that can be relieved with pillow propping, patient should not be concerned of a worsening condition as it is part of the heart failure disease process.</td>
<td></td>
</tr>
<tr>
<td>1. True</td>
<td>0.0%</td>
</tr>
<tr>
<td>2. False</td>
<td>100.0%</td>
</tr>
<tr>
<td>Which of the following symptoms should patients report to their provider?</td>
<td></td>
</tr>
<tr>
<td>1. Increases shortness of breath with normal activity</td>
<td>0.0%</td>
</tr>
<tr>
<td>2. Nocturnal dyspnea</td>
<td>0.0%</td>
</tr>
<tr>
<td>3. Increased fatigue</td>
<td>0.0%</td>
</tr>
<tr>
<td>4. All of the above</td>
<td>100.0%</td>
</tr>
<tr>
<td>If a patient is hospitalized with HF, a follow up appointment should be scheduled with his or her provider within:</td>
<td></td>
</tr>
<tr>
<td>1. 24 hours of discharge</td>
<td>50.0%</td>
</tr>
<tr>
<td>2. One week of discharge</td>
<td>50.0%</td>
</tr>
<tr>
<td>3. Two weeks of discharge</td>
<td>0.0%</td>
</tr>
<tr>
<td>4. Only as needed</td>
<td>0.0%</td>
</tr>
<tr>
<td>When a patient is symptom free, follow-up visits should be scheduled every:</td>
<td></td>
</tr>
<tr>
<td>1. Month</td>
<td>33.33%</td>
</tr>
<tr>
<td>2. 3-6 months</td>
<td>66.67%</td>
</tr>
<tr>
<td>3. 9 months</td>
<td>0.0%</td>
</tr>
<tr>
<td>4. Year</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Of the HF management topics included in the survey, signs and symptoms of a worsening HF condition was the most misunderstood by home care NPs. According to HFSA (2010) guidelines, signs of a worsening condition may include early satiety, nausea and vomiting,
abdominal discomfort, and leg swelling. A weight gain of less than one pound in one day is not significant and does not require reporting (HFSA, 2010). Although, participants demonstrated a basic knowledge of HF, they had difficulty appropriately identifying all signs and symptoms of HF. The ability for home care NPs to understand and appropriately identify signs and symptoms of HF when delivering self-care education to patients is crucial.

Another area of knowledge limitation identified by survey responses was follow-up care for patients with HF. The current recommendation for post-acute care follow-up is within one week of hospital discharge (HFSA, 2010). Only 50% of participants were able to correctly identify the need for a follow-up appointment within one week of hospital discharge. It is further recommended that patients with HF who are stable and symptom free should follow up with their health care provider every 3-6 months for best outcomes (HFSA, 2010). In this instance, participants did not demonstrate understanding, which is important information to know when managing patients with HF.

The majority of participants (83.33%) demonstrated proficiency when asked about medication regimens for patients with HF. Nonsteroidal anti-inflammatory drugs (NSAIDS), including cyclooxygenase-2 inhibitors, are not recommended in patients with HF because the risk of renal failure and fluid retention is significantly increased (HFSA, 2010). Participants also showed proficiency in understanding that compliance with pharmacological treatment may not always stop HF from progressing. Educating patients on pharmacological therapy is most appropriate for managing generalized aches and pains. Additionally, advising patients of the possibility of disease progression despite medication compliance is essential when advocating for improved patient outcomes.
The importance of physical activity in patients with HF was well understood by participants. HFSA (2010) recommends that patients participate in moderate physical activity for 30 minutes five days per week, which was correctly identified by the majority of participants (66.67%). Exercise has been linked to improved autonomic dysfunction response and improved cardiac output in patients with HF and its importance should not be overlooked when educating patients on self-care management topics (HFSA, 2010).

The majority of participants were able to determine when an abnormal weight gain occurs in patients with HF and when it should be reported to their health care provider. All participants agreed that teaching patients to weigh themselves daily at the same time and under the same conditions should be part of the patient’s HF education. Conversely, only half of the respondents were able to identify that a three-pound weight gain within 48 hours should be reported. Although participants understand daily weights are an important component of HF self-care management, they were not consistent in identifying specific parameters regarding weight gain and when it should be reported to a health care provider.

All participants demonstrated understanding of low-sodium food options for patients with HF. However, only half of the participants were able to identify appropriate limitations of sodium intake. According to HFSA (2010) dietary sodium restriction of two to three grams daily is recommended for patients with HF. Home care NP knowledge regarding nutritional target and goals is important in delivering self-care management information for patients with HF. The majority (66.67%) of participants were able to identify fluid restrictions of less than two liters in a 24-hour period. This would suggest that while participants are knowledgeable about fluid restriction requirements for patients with HF, there is room for improvement.
Study Limitations

The small sample was the prime limitation of this project inquiry. The low response rate reduced the generalizability of its findings to a larger population. Another limitation could have been the NP membership of the New Mexico Nurse Practitioner Council. While there are 575 current members, it is not known how many members are actually home care NPs. Additionally, the survey was not emailed via a listserv, but rather it was posted to the New Mexico Nurse Practitioner Council website which potentially could have been missed by many members if they were not actively searching the organization’s website. Also, the conditions under which NPs took the survey were not controlled and they could have easily collaborated with one another or looked up the information on technological devices leading to skewing of results. Despite providing thorough instruction prior to the survey, each participant was responsible for reading the instructions and clicking on the link provided, variations in comprehension of the instructions could have been a possibility. Furthermore, two days after the survey was distributed, administration personnel from the New Mexico Nurse Practitioner Council contacted the primary investigator (PI) and stated the link was not working. The PI was able to identify the problem and reminded administration that participants needed to click the last link provided, not the IRB link. This could have deterred participants from completing the survey, impacting project inquiry results. Finally, while a reminder was sent out two weeks after the initial survey, weekly reminders may have resulted in an increased survey participation leading to more generalizable results.

CONCLUSION

HF continues to be a common diagnosis for patients in home care, and it is frequently associated with poor outcomes. This project inquiry demonstrates that home care NPs have a
general knowledge base of HF self-care management topics. However, there is meaningful opportunity for improved knowledge within the six education topics as identified by JACHO and HFSA. Home care NPs are in a unique position to provide HF education in the comfort of the patient’s home which can aid in the reduction of hospital readmissions due to HF exacerbations. Having a thorough understanding of HF education topics is crucial as home care NPs can play a vital role in helping improve patient outcomes.

This project inquiry, although small, suggests that home care NPs may need to increase their knowledge of HF self-care management education topics that may better assist patients in recognizing signs and symptoms of HF exacerbations. Increased HF knowledge may play an important role in improving home care NPs strategies when providing HF education ultimately leading to enhanced patient care and education for patients with HF and their families. Further exploration is warranted to address specific knowledge deficits in home care NPs and to determine if HF education programs or standards of care would actually enhance and maintain home care NPs’ knowledge of HF self-care management education.
APPENDIX A:

RESEARCH TABLES
<table>
<thead>
<tr>
<th>Author / Article</th>
<th>Qual: Concepts or phenomena</th>
<th>Theoretical Framework</th>
<th>Design</th>
<th>Sample (N)</th>
<th>Data Collection (Instruments/tools)</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaney et al., 2011.</td>
<td>Home care nurses; knowledge of evidence-based education topics for management of heart failure.</td>
<td>The purpose of this study was to identify whether or not home care nurses have sufficient knowledge regarding evidence-based education topics for the management of patients with heart failure.</td>
<td>Not identified in the study.</td>
<td>N=94</td>
<td>A 20-item survey was used to assess knowledge in 5 education topic themes determined by evidence-based guidelines. Topics included: 1. Signs and symptoms of worsening conditions 2. Fluids or weight 3. Diet 4. Medications 5. Exercise An open-ended question was added to the end of the survey to determine common themes among home care nurses.</td>
<td>Home care nurses mean score for knowledge about HF was 15.78 out of a possible 20 points. Correct responses for survey questions ranged from 24.5% to 100%. In 4 of the 5 topic themes there was sufficient variation regarding the depth of knowledge of HF management. Nurses requested more information in all 5 topics as well as information regarding the psychosocial support of patient and their families. Based on this study nurse demonstrate a basic level of understanding regarding HF management but there is substantial room for improvement.</td>
</tr>
<tr>
<td><strong>Sterne et al., 2014.</strong></td>
<td><strong>The intent of the study was to assess nurses’ knowledge of heart failure by evaluating test scores before and after an educational intervention.</strong></td>
<td><strong>Carper’s Patterns of Knowing was the framework used for this study. This model encompasses 4 ways that nurses learn and the 2 identified in this particular study include empirical and personal.</strong></td>
<td><strong>A one-group pretest-posttest design was used.</strong></td>
<td><strong>A convenience sample was taken from RNs employed in a 200-bed community hospital in the Northeast.</strong></td>
<td><strong>Intervention included a 30-minute power point presentation of HF management strategies and education topics.</strong></td>
<td><strong>Findings of the study revealed a statistically significant increase in nurses’ posttest scores (p&lt;0.001).</strong></td>
</tr>
<tr>
<td><strong>Nurses’ knowledge of heart failure implications for decreasing 30 day readmission rates</strong></td>
<td><strong>30-day readmission rates were also evaluated before and after education intervention.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mahramus, et al., 2014.</strong></td>
<td><strong>The purpose of this study was to assess nurses’ knowledge of HF self-care before, after, and 3 months later following an educational intervention.</strong></td>
<td><strong>Not identified in the study.</strong></td>
<td><strong>A quasi-experimental, repeated measures design was used for this study.</strong></td>
<td><strong>A convenience sample of nurses that routine care for HF patients in a large tertiary hospital system in the Southeastern United States. Nurses were recruited from four adult inpatient units in three hospitals and the home health department.</strong></td>
<td><strong>2 different instruments were used to evaluate nurses’ knowledge of HF principles.</strong></td>
<td><strong>Results suggest that nurses have significant knowledge deficits about signs and symptoms related to worsening symptoms, fluid and blood pressure assessments, and dietary and medication management.</strong></td>
</tr>
<tr>
<td><strong>Assessment of an educational intervention on nurses’ knowledge and retention of heart failure self-care principles and the teach-back method.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>Purpose</td>
<td>Framework Identified</td>
<td>Quality Improvement Project</td>
<td>N=40</td>
<td>Diagnosed with class III or IV heart failure were chosen. All of the patients were homebound and had not sought care in at least one year.</td>
<td>NP was notified of the patients who qualified and visits were started within one week. Admissions, 30 day readmissions, hospitalization rates and quality of life was recorded via and EMR Epic. Kansas City Cardiomyopathy Questionnaire was used to determine quality of life.</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>----------------------</td>
<td>-----------------------------</td>
<td>------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Echeverry et al., 2015.</td>
<td>Impact of APN home visits in reducing healthcare costs and improving function in homebound heart failure</td>
<td>Framework not identified.</td>
<td>Quality improvement project.</td>
<td>N=40</td>
<td>Diagnosed with class III or IV heart failure were chosen. All of the patients were homebound and had not sought care in at least one year.</td>
<td>NP was notified of the patients who qualified and visits were started within one week. Admissions, 30 day readmissions, hospitalization rates and quality of life was recorded via and EMR Epic. Kansas City Cardiomyopathy Questionnaire was used to determine quality of life.</td>
</tr>
<tr>
<td>Lowery et al., 2012.</td>
<td>Evaluation of a nurse practitioner disease management model for chronic heart failure: A multi site implementation study.</td>
<td>Framework not identified in the study.</td>
<td>A prospective, quasi-experimental study.</td>
<td>N=969</td>
<td>Intervention group=458 Control group =511 Inclusion criteria: Received all cardiac care from VA No comorbidities associated with life expectancy &lt;6 months. HF secondary to systolic or diastolic dysfunction.</td>
<td>Patients were selected from EMR if they met the inclusion criteria for the study and asked to be apart of the study. Participants were either assigned to the control or intervention group.</td>
</tr>
<tr>
<td>Bryant &amp; Gaspar, 2014</td>
<td>Implementation of a self-care of heart failure program among home-based clients.</td>
<td>The purpose of this study was to determine how a self-care heart failure program impacts hospital admissions and patient’s perception of self-care management.</td>
<td>The Self-Care of Heart Failure Model provided a framework for the HF self care program. It helped to provide a conceptual clarity of self-care in HF management.</td>
<td>A single group, pre and post intervention design with patients serving as their own control measure was used.</td>
<td>N=18 Patients were age 65 and older, homebound, and receiving primary care services by NPs in a Midwest urban area house call practice.</td>
<td>Hospital admissions for HF for a six-month measurement period were compared to the number of participants HF admissions prior to the intervention. The Self-Care of Heart Failure Index was also used pre and post intervention to measure heart failure maintenance, management and confidence.</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Albert, 2016</td>
<td>A systematic review of transitional-care strategies to reduce rehospitalization in patients with heart failure.</td>
<td>The purpose of this review was to evaluate existing transition-of care-models and identify the common themes that may lead to fewer exacerbations and rehospitalizations.</td>
<td>Not identified in the study.</td>
<td>A systematic literature review.</td>
<td>44 articles Articles were only included if they had at least some patients with HF and had one transition component.</td>
<td>The search included databases such as PubMed, Google Scholar, MEDLINE, CINAHL, EMBASE, and the Cochrane Library. Key terms included transition of care, care transition, transition after hospitalization, transition for HF patients, care continuum transition, transition interventions, and outcomes of transition of care.</td>
</tr>
<tr>
<td>Jaarsma et al., 2014. Components of heart failure management in home care; a literature review.</td>
<td>The purpose of this literature review was to identify what components have been identified in research studies involving home care and heart failure interventions.</td>
<td>Not identified in the study.</td>
<td>A systematic literature review.</td>
<td>N=70 Inclusion criteria included: describe a clinical trial in the home care setting, patients had to be age 18 or older, had to be published in English, and full-text articles published in peer reviewed journals.</td>
<td>Databases used included PubMed, EMBASE, CINAHL, and Cochrane. Search strategy included HF and homecare related search terms. Articles were then summarized in a table identifying the components of home care in HF patients.</td>
<td>The data reveals that there continues to be a variety of components in the delivery methods for HF care in the home. This review did not focus on the effectiveness of each method but it did reveal the need for the standardization in the standards of care for HF management. The most common component in these studies included a multidisciplinary approach with multiple education topics. Common topics included HF in general, deteriorating signs and symptoms, medication education, diet, and physical activity. Only seven studies reported the inclusion of family members and caregivers in the education process, despite the recommendations clearly made in the clinical guidelines for HF management.</td>
</tr>
<tr>
<td>Authors</td>
<td>Study Title</td>
<td>Objective</td>
<td>Study Design</td>
<td>Sample Size</td>
<td>Inclusion Criteria</td>
<td>Data Analysis</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-------------------------------</td>
<td>-------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Ahmad et al., 2016</td>
<td>Comparing perspectives of patients, caregivers, and clinicians on heart failure management.</td>
<td>The purpose of this study was to identify and compare the perspectives of HF patients, their caregivers, and their care team on HF management and hospital admissions.</td>
<td>Not identified in the study.</td>
<td>N=157 (58 pts. 32 cgs, 67 clinicians)</td>
<td>A purposive sample of HF patients, their caregivers and clinicians for to large urban hospital settings. Inclusion criteria for patients were admission to cardiology or general medicine at either site with a primary diagnosis of HF. Clinician participants were those working on teams caring for HF patients.</td>
<td>A freelist interview guide was developed to include initial descriptions of the study, instructions, and warm up exercise. The questions were designed to identify perceptions of management of HF in the home, barriers to effective management, and reasons for hospitalization. Data was analyzed with the use of Anthropac Salience indices for themes until saturation was achieved.</td>
</tr>
<tr>
<td>Retrum et al., 2013</td>
<td>The purpose of this study was to systematically investigate patients perspectives about the reasons for readmission after a hospital discharge for HF.</td>
<td>Not identified in the study.</td>
<td>A qualitative study design was used.</td>
<td>N=28</td>
<td>Patients were referred from an academic and community based hospital. Patients discharged with a primary diagnosis of HF and were then readmitted within 180 days were eligible for the study.</td>
<td>30 to 60 minute semi-structured interviews were used to collect the data and identify common themes. The interview guide had 23 open ended questions related to inpatient experience, discharge transitions, medical follow up, adherence, psychosocial issues, and support in the post discharge environment.</td>
</tr>
</tbody>
</table>
APPENDIX B:

SURVEY COVER LETTER
Survey Cover Letter

Thank you in advance for your participation in this survey. I am a Doctor of Nursing Practice (DNP) student at The University of Arizona College of Nursing. My DNP project examines home care nurse practitioner’s (NPs) knowledge of self-care management for patients with heart failure. Information collected from this survey could potentially benefit patients with heart failure by identifying areas of strengths and weaknesses in the HF self-care management education they receive from home care NPs.

The attached electronic survey contains twenty-two multiple-choice questions and will take approximately 10-15 minutes to complete. While there is no compensation for your participation, a summary of the findings will be available per your request. Your participation in this survey is voluntary and your identity will be kept confidential. There are no risks associated with participating in this project inquiry. Information collected from this survey has the potential to benefit nurse practitioners and may aid in the development of a practice recommendations regarding self-care management education for patients with heart failure.

An Institutional Review Board responsible for human subjects’ research at The University of Arizona reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research. For questions about your rights as a participant in this project inquiry or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact the Human Subjects Protection Program at 520-626-6721 or online at http://rgw.arizona.edu/compliance/human-subjects-protection-program.

If you have any questions about the survey or your participation, you may email msaenz1@email.arizona.edu By completing and submitting this survey, you are providing your informed consent.

I appreciate your attention and participation in this project.

Mia Saenz, RN, BSN
DNP Student
University of Arizona
APPENDIX C:

HEART FAILURE SURVEY
Heart Failure Knowledge Survey for Nurse Practitioners in Home Health
(This survey will take approximately twenty minutes to complete.)

Heart failure is a chronic illness that will lead to frailty and death and continues to be a chief concern for the U.S. Home health practitioners are in a unique position to educate and manage patients with heart failure. This survey is intended to capture the HF knowledge base of NPs working in home health to improve transitions of care, education strategies and patient outcomes.

1. What is your gender?
   a. Male
   b. Female
   c. Prefer not to answer

2. What is the highest nursing degree earned?
   a. Master of Science in Nursing
   b. Doctorate of Nursing Practice
   c. PhD
   d. Certificate or other

3. What is your specialty track?
   a. Family Nurse Practitioner
   b. Adult Geriatric Nurse Practitioner
   c. Other_____________

4. Do you consider your primary practice setting rural or urban?
   a. Rural (population <50,000)
   b. Urban (population >50,000)

5. How long have you practiced as a nurse practitioner?
   a. Less than one year
   b. 2-5 years
   c. 6-10 years
   d. > 10 years

6. How long have you practiced in the home care setting?
   a. Less than one year
   b. 2-5 years
   c. 6-10 years
   d. >10 years

7. How often do you manage the care of patients with a diagnosis of heart failure?
   a. Daily
   b. Weekly
   c. Few times per month
d. Rarely

**Diet Modification**

1. Daily (24 hours) sodium intake should be limited to:
   a. 100 mg to 500 mg
   b. 500 mg to 1000 mg
   c. 1000 mg to 1200 mg
   d. 2000 mg to 3000 mg
   e. Greater than 3000 mg

2. Daily (24 hours) fluid restriction management should be limited to:
   a. No more than 100 ml
   b. Between 100 ml and 500 ml
   c. Less than 1000 ml
   d. About 1500 ml
   e. Fluid restriction does not matter

3. Low sodium food options for heart failure patients may include:
   a. Canned foods
   b. Deli meats
   c. Bacon burger
   d. Green vegetables

**Weight Monitoring**

4. Typically, a weight gain of ___ pounds in 48 hours is a concern and should be reported.
   a. 1 pound
   b. 2 pounds
   c. 3 pounds
   d. 5 pounds

5. If patient reports a weight gain of 4 pounds in 72 hours but is asymptomatic, they should not be concerned.
   a. True
   b. False

6. Patients should be expected to weigh themselves:
   a. Daily
   b. Every other day
   c. Twice per week
   d. Only when short of breath

**Physical Activity**
7. Patients with HF should be instructed to avoid moderate activity/exercise.
   a. True
   b. False

8. An exercise goal for heart failure patients should include:
   a. 15 minutes 3 days per week
   b. 30 minutes 5 days per week
   c. 60 minutes every day
   d. No exercise should be expected

Medication Regimens

9. The following medication should be avoided in patients with HF for their generalized body aches and pains.
   a. NSAIDs
   b. Cox-2 Inhibitors
   c. Acetaminophen
   d. A & B
   e. None of the above

10. Taking medications as prescribed will guarantee patients HF condition will not progress
    a. True
    b. False

Signs and Symptoms of Exacerbation

11. Signs of a worsening condition may include (circle all that apply):
    a. Early satiety
    b. Nausea and vomiting
    c. Abdominal discomfort
    d. Weight gain of less than one pound in one day
    e. Leg swelling

12. If the patient experiences shortness of breath while sleeping that can be relieved with pillow propping, patient should not be concerned of a worsening condition as it is part of the heart failure disease process.
    a. True
    b. False

13. Which of the following symptoms should patients report to their provider?
    a. Increased shortness of breath with normal activity
    b. Nocturnal dyspnea
    c. Increased fatigue
d. All of the above

**Follow-up care**

14. If a patient is hospitalized with HF, a follow up appointment should be scheduled with his or her provider within:
   a. 24 hours of discharge
   b. One week of discharge
   c. Two weeks of discharge
   d. Only as needed

15. When a patient is symptom free, follow-up visits should be scheduled every:
   a. Month
   b. 3-6 months
   c. 9 months
   d. Year
APPENDIX D:

TWO-WEEK SURVEY REMINDER
Two-week Survey Reminder

Thank you in advance for your participation in this survey. I am a Doctor of Nursing Practice (DNP) student at The University of Arizona College of Nursing. My DNP project examines home care nurse practitioner’s (NPs) knowledge of self-care management for patients with heart failure. Information collected from this survey could potentially benefit patients with heart failure by identifying areas of strengths or weaknesses in the care they receive from home care NPs.

This is a reminder that there are only two weeks left to participate in this heart failure survey. Your information would be greatly appreciated and is critical in understanding the knowledge base of NPs regarding heart failure self-management. The attached electronic survey contains twenty-two multiple-choice questions and will take approximately 10-15 minutes to complete.

Your participation in this survey is voluntary and your identity will be kept confidential. There are no risks associated with participating in this project inquiry. Information collected from this survey has the potential to benefit nurse practitioners and may aid in the development of a practice recommendation regarding self-care management education for patients with heart failure.

An Institutional Review Board responsible for human subjects’ research at The University of Arizona reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research. For questions about your rights as a participant in this project inquiry or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact the Human Subjects Protection Program at 520-626-6721 or online at http://rgw.arizona.edu/compliance/human-subjects-protection-program.

If you have any questions about the survey or your participation, you may email msaenz1@email.arizona.edu By completing and submitting this survey, you are providing your informed consent.

Thank you,

Mia Saenz, RN, BSN
DNP Student
University of Arizona
APPENDIX E:

PROJECTED BUDGET
Projected Budget

<table>
<thead>
<tr>
<th>Expense Items</th>
<th>Requested Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPSS Software</td>
<td>$150.00</td>
</tr>
<tr>
<td>Total</td>
<td>$150.00</td>
</tr>
</tbody>
</table>
REFERENCES


American Heart Association. (2015). What is heart failure? Retrieved from http://www.heart.org/HEARTORG/Conditions/HeartFailure/AboutHeartFailure/AboutHeart-Failure_UCM_002044_Article.jsp#.Vry2F1I2KHk


Sauris, A., Flavell, C., Weintraub, J. et al. (2013). Pilot study of a hospital-to-home program to reduce heart failure readmissions led by heart failure nurse practitioners. *Journal of Cardiac Failure, 17*(8), s100.


