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Heart Failure Patient Self-Care: An Evidence-Based Outpatient Management Program

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UNIVERSITY OF SAN DIEGO
Hahn School of Nursing and Health Science

DOCTOR OF NURSING PRACTICE PORTFOLIO

by

Christine M. Ensign

A portfolio presented to the

FACULTY OF THE HAHN SCHOOL OF NURSING AND HEALTH SCIENCE
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In partial fulfillment of the
requirements for the degree

DOCTOR OF NURSING PRACTICE
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HEART FAILURE PATIENT SELF-CARE: AN EVIDENCE-BASED OUTPATIENT
MANAGEMENT PROGRAM

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Abstract

Background: According to the American Heart Association, there are over 5 million people in the United States with heart failure (HF) and projections suggest the prevalence of HF will increase by 46% through 2030. HF is the most common cause of hospital admissions in the United States for patients age 65 years or older and despite improvement outcomes, national readmission rates remain high at 23%. Current guidelines recommend health professionals provide comprehensive HF education and counseling that is not only focused on knowledge, but also on skills of management and self-care behaviors. In order to achieve quality patient-centered care, the patient must actively participate in their plan of care. According to the evidence, self-care management programs in HF can improve self-care and decrease HF readmission and mortality rates

Purpose: The purpose of this evidence-based practice project was to incorporate a HF self-care management program in an outpatient cardiology clinic to improve self-care behaviors and reduce hospital readmissions in HF patients recently discharged from the hospital.

Practice Change: An evidence-based HF self-care management educational program led by an advanced practice-nursing student was implemented in an outpatient advanced HF clinic post hospital discharge. The program included an initial evaluation of self-care using a validated questionnaire, HF self-care education, 5 weekly telephone support calls, and reevaluation of self-care following the program.

Results: Participants had statistically significant improvements in HF self-care maintenance, management, and confidence. The participants had no all-cause 30-day readmissions while 60 and 90-day readmission rates remained below 30%. This program also helped decrease HF all-cause 30-day readmissions to 15.7%.

Implications: The findings from this project suggest that evidence-based outpatient self-care management programs can improve HF patient self-care and reduce readmission rates. This program supports the need for individualized HF outpatient self-care management programs that are designed and supported by advanced practice nurses and registered nurses to reduce readmissions and improve self-care behavior in patients with HF.

Background

According to the American Heart Association (2014), there are over 5 million people in the United States with heart failure (HF) and projections suggest the prevalence of HF will increase by 46% through 2030. HF is the most common causes of hospital admissions in the United States for patients age 65 years or older and despite improvement outcomes, national readmission rates remain high at 23% (Centers for Medicare and Medicaid Services (CMS), 2013a). Due to changes in Medicare reimbursement payments, there has been a major emphasis toward reducing the 30-day readmission rates of heart failure patients. Current Medicare regulations under the Hospital Readmissions Reduction Program reduces the amount of Medicare reimbursement if a patient with HF is readmitted within 30 days (CMS), 2013b). Despite the increased national compliance in meeting these core measures, hospital readmission rates are gradually decreasing or, at minimum, remaining relatively unchanged (Chen, Normand, Wang, & Krumholz, 2011).

Heart failure management must be evidence-based in order to promote optimal patient outcomes. Yet, health care providers often fail to address the patient and/or caregiver self-care abilities or self-confidence required to successfully manage this complex disease (Riegel et al., 2009). Current guidelines recommend health professionals provide comprehensive HF education and counseling that is not only focused on knowledge, but also on skills of management and self-care behaviors (Krum et al, 2011; Lainscak et al, 2011; Yancy et al, 2013). Thus, successful HF patient self-care management requires that the patient be an active participant in their plan of care. There is an abundance of scientific evidence that supports self-care outpatient management

programs in HF to improve self-care and decrease HF readmissions (Baker et al, 2011; Clark et al, 2014; Huntington et al., 2013; Gonzalez et al, 2014; Otsu & Moriyama, 2011; Tung et al, 2013). Heart failure self-care focuses on the patient's ability to adhere to behaviors such as maintaining a low sodium diet, taking prescribed medications, and symptom monitoring with the ability to maintain physiological stability with appropriate responses to symptoms when they occur (Dickson, Buck, & Riegel, 2011). Promotion of self-care is guideline recommended; the current joint clinical guideline from the American College of Cardiology Foundation (ACCF) and the American Heart Association (AHA) (2013) supports education focused on improving self-care behaviors. This report emphasized that pre-discharge education received by patients is not always sufficient; therefore, many HF patients need disease management programs after discharge (Yancy et al., 2013).

The purpose of this evidence-based practice project was to improve self-care and decrease HF patient readmissions. The practice change was to incorporate a HF self-care management program in an outpatient cardiology clinic in order to reduce hospital admissions and improve self-care behaviors in HF patients recently discharged from the hospital.

Practice Change

A pre/post-intervention design with pre-determined benchmarks was utilized for this practice change project. The project extended over a three-month period from September through December 2014 at an outpatient advanced HF clinic located in an academic medical center in Southern California. All patients presenting for their initial follow-up visit were given an opportunity to participate in a self-care management

program that included self-care screening, education, and a 5-week structured telephone support program.

The benchmarks established for this project included a 10% increase in each Self-Care of Heart Failure Index (SCHFI) category, along with a 30 day all cause readmission rate less than 15% and a HF related readmission rate less than 30% at 60-90-days. Thus, the primary outcome was all cause 30-day readmission rates while secondary outcomes included HF related readmissions at 60 and 90-days. In addition, a cost effective analysis was also completed to assess the projected impact of reduced readmissions and the benchmark was determined at an estimated \$500,000 in direct cost savings through prevention of all-cause 30-day readmissions.

Eighteen patients from the heart failure clinic (average NYHA class III-IV) were enrolled in the self-care management program. All patients with a diagnosis of HF with preserved or reduced ejection fraction, able to read or write in English or Spanish, without cognitive impairment, and who presented within 14 days of hospital discharge for their post-hospital discharge follow-up were eligible to participate in the project. The project was approved by both the university and academic medical center Institutional Review Boards.

The SCHFI was initially administered to participants at the beginning of the project. The SCHFI is a validated screening tool that has been used to measure self-care behaviors recommended by the current HF guidelines focusing on the maintenance, management, and confidence of HF patients (Vellone et al., 2013). The tool provides a means for identifying deficits in self-care and a determining measurement for improvement following education and support. Following completion of the SCHFI, each

participant was given a brochure (Krames FastGuide, “Understanding Heart Failure”), published by The StayWell Company, LLC (2014), offering education on the causes and effects of HF as well as lifestyle changes to take home and review. At the end of their discharge follow up, all participants were scheduled by a nurse to follow-up in one week for an educational nurse visit led by the advanced practice nursing student along with nursing assessment of symptoms, physical assessment, and medication reconciliation.

During the nurse follow-up visit, patients received a 60-minute session of self-care education that included review of an educational interactive workbook (Krames, “Living Well With Heart Failure”) published by The StayWell Company, LLC (2014), and specific to HF self-care management based on current AHA guidelines. The workbook, written at a fourth grade reading level, included an action plan-oriented approach that includes setting goals, tracking progress, and identifying and overcoming barriers related to HF self-care. The teach-back method of educational instruction was used to ensure all patients were able to understand the education and information discussed during the session and review of the educational workbook.

The remainder of the program consisted of 5 weekly 15-20 minute telephone follow-up support calls to reiterate the education participants received, determine whether the participants were engaging in self-care behaviors, mitigate any barriers to care, and address management of symptoms. At the end of the self-care management program, all participants were reevaluated using the SCHFI in person, except for one participant who completed the survey via mail; and a chart review was completed to review potential readmission data.

Results

Of the 18 heart failure participants who initially agreed to participate in the program, 10 completed the program. Participant's ages ranged from 30 to 83 years, with a mean age of 59.8 years, while 40% of participants aged 65 years or older. Participants were mostly male (70 %) with Stage C or D HF with an EF <30% (range 14-53%, mean of 24.8%). The participant's ethnicity was Non-Hispanic White (40%), Non-Hispanic Black (40%), and Hispanic (20%)-see table 1.

Pre and post SCHFI scores for the 10 participants improved in self-care maintenance, management, and confidence, and the benchmark of a 10% increase in SCHFI scores was nearly met in all categories, with the exception of maintenance (see Figure 1). According to the SCHFI follow-up questionnaire, 6:10 participants were symptom free following completion of the program. The readmission benchmarks set for 30, 60, and 90-days were also achieved (see Figure 2).

A cost effectiveness analysis (see Table 2), completed following implementation of the program, was based on annual costs of the program and revealed cost-savings exceeding the set benchmark of \$500,000. Direct annual costs for implementing the project would involve the addition on an APRN, educational material, weight scales, and blood pressure cuffs. Assuming the facility improves all-cause 30-day readmission rates by an estimated 45% as seen in previous studies, and thus averting 74 readmissions, the estimated savings would equal approximately \$838,000 (Huntington et al., 2013 & McCarthy, 2012).

Discussion

The results from this evidence-based project support that an outpatient HF self-care management program strongly suggest incorporation as a component of a

comprehensive post-discharge plan that can improve heart failure patient self-care and subsequently reduce 30-day readmission rates. These results were consistent with findings from similar self-care management programs providing education on knowledge, self-care and symptoms using telephone support (Huntington et al., 2013; Tung et al., 2013; Baker et al., 2011). Effective self-care behaviors have clearly been associated with reduction or prevention of 30-day heart failure and all-cause readmissions (Leppin et al., 2014).

This program was part of an interdisciplinary discharge program that included inpatient nurse education, a call from a pharmacy resident 72 hours post discharge to review medications and weight, and a follow-up visit in the outpatient HF clinic within 14 days of hospital discharge to review and discuss HF medications by pharmacy residents. The existing program did not provide outpatient education, support of self-care, or longer-term follow-up care. Reduction of readmissions within the outpatient setting had not previously been targeted as with this practice change project. The addition of this educational self-care management support program proved valuable in providing HF patients with a comprehensive discharge program to prevent readmissions as was reflected with an overall reduction in the fourth quarter all-payer readmission rate from 22.7% (average of the three previous quarters of 2014) to 15.7%. The reduction in readmission rates experienced with incorporation of this program is consistent with study findings by Huntington et al. (2013) and a case study by McCarthy (2011) whereby 30-day readmission reductions occurred by 46% and 42% respectively. The outcomes from this project were also consistent with outcomes from Leppin et al. (2014), in which interventions including multiple components for supporting patient capacity for self-care

were more effective than one specific intervention in preventing all-cause 30-day readmissions, as this self-care management included multiple components supporting patient self-care.

In addition to HF self-care education, participants in the program all received follow-up telephone support calls. These phone calls were an essential part of this program since the interaction afforded participants individualized conversation with the nurse that frequently focused on unique self-care barriers that were worsening their symptoms of heart failure (Inglis et al, 2011). Several participants were experiencing depression that was affecting their motivation to initiate behavior changes related to self-care. The incidence of depression is frequently associated with a chronic illness such as heart failure and must be successfully managed in order to increase the probability of patient empowerment with self-care (Yohannes, Willgoss, Baldwin, & Connolly, 2010). Patients identified with depression were subsequently referred for treatment of depression to their primary care provider. In addition, the lack of emotional support identified with several participants was also a factor in the participant's ability to successfully manage their self-care. Typically, conversation would explore possible significant others including family and/or friends who might be a source of support for these participants. Social support systems and available in the community and contact information were shared with these participants too. These identified barriers have similarly been reported in the literature including a meta-synthesis of qualitative studies focused on barriers and facilitators of self-care in heart failure (Siabani, Leeder & Davidson, 2013). In this study, findings concluded that insufficient knowledge, depression and anxiety, and adverse

coping strategies hindered self-care, but supportive environments, trust in health care providers, and optimism were identified as positively effecting self-care.

Overall, the participants in this program reported that the follow-up phone calls helped to develop a trusting relationship with the nurse and offered assurance that assistance was only a phone call away. Comments from the participants included: “You have been so helpful in making sure I am keeping on track, I find it comforting knowing I have someone looking after me every week;” “You are able to answer all the questions I have in a way I understand, I don’t know what I would do without you;” “I feel as though you really listen to me and take the time to discuss the difficulties I am having, I am very thankful for the time you have taken to speak with me.” These findings also support the unique ability of nurses in providing holistic supportive care to HF patients in order to ensure comprehensive disease management (Case, Haynes, Holaday, & Parker, 2010).

Regarding the two participants who were readmitted, one of the participants had a SCHFI self-care management score of 52%, which was considerably lower than the other participants, while interestingly the other participant had self-care maintenance and management scores higher than other participants (82% and 83% respectively). While the lower than average self-care management score of the one participant seemed helpful in providing an explanation for the patient readmission, the rationale for the other participant is somewhat perplexing. However, both of these participants did have an EF that was consistent with their advanced heart failure diagnosis of 17% and 14%, respectively. By the 90-day follow-up, one of the participants was under evaluation for a left ventricular assist device and heart transplant and the other had been placed on palliative care. Furthermore, these two participants were Non-Hispanic Blacks who tend

to experience a higher readmission rate than other ethnicities such as Non-Hispanic whites (Joynt, Oray, & Jha, 2011). The results from this practice change project appear to be consistent with existing disparities in preventing readmissions in black patients with heart failure (Cuyjet & Akinboboye, 2014).

Lastly, there were important characteristics identified in participants who chose not to complete the program related to their self-care scores and readmission rates. The average baseline self-care scores in each category of the participants who dropped out of the program were lower than program participants who completed the program, especially in self-care management and confidence (see Table 1). Readmission rates at 30, 60, and 90-day (see Figure 3) were much higher in the participants who chose not to complete the program; suggesting those who have lower baseline self-care scores in management and confidence, and do not receive self-care education and support, have a higher risk of readmission (Sahebi et al., 2015). However, participants who did not complete the program also had a higher average NYHA classification that may have increased their risk for readmission (Giamouzis et al., 2011).

Limitations

The number of participants in this project was small and, therefore, may not accurately reflect potential outcomes if this practice change was incorporated with a larger number of HF patients. There was also a significant amount of participants who failed to come back for the nurse educational visit and chose not to reschedule or participate in the program. The participants who completed the program (n=10), including the follow up educational visit and participation in all telephone follow up calls displayed a high level of motivation. Lack of participant completion was evaluated through a phone

interview follow up and was multifactorial including: (1) deciding not to participate because they felt fully educated on HF and had control over their HF symptoms, (2) lack of transportation, and (3) long clinic wait times. Even though compensation for time and travel were offered to these participants, they still elected not to complete the program. The lack of participation might have been avoided if those who chose to participate had received the educational intervention on the same day while emphasizing the importance of having an educational self-care intervention included in the first post-discharge appointment.

Implications

Preventing and decreasing readmissions for patients with HF continues to be a significant challenge for hospital administrators and outpatient clinic providers. The favorable outcomes achieved in this project show that an outpatient educational self-care management program can be incorporated in the outpatient setting as part of a HF comprehensive discharge management program. Advanced practice registered nurses (APRNs) and registered nurses (RNs) who are trained in HF self-care management can provide the leadership in developing a post hospital discharge follow-up heart failure program to improve self-care behaviors, decrease re-hospitalizations, and achieve cost-savings through prevention of 30-day readmissions. As team members, APRNs and RNs should also advocate for weekly post discharge telephone support calls as a component of a comprehensive HF discharge program to provide emotional support, identify barriers to self-care, & empower HF patients to perform self-care.

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Appendix

Table 1:

Characteristics of Participants

CHARACTERISTICS	COMPLETED (n=10)	DID NOT COMPLETE (n=8)
Age	30-83 yrs.	51-76 yrs.
<i>Mean</i>	59.8	61.8
Sex		
<i>Male</i>	70 %	62. 5%
<i>Female</i>	30 %	37. 5%
Race		
<i>Non-Hispanic White</i>	40 %	50 %
<i>Non-Hispanic Black</i>	40 %	25 %
<i>Hispanic</i>	20 %	25 %
NYHA Class	I-IV	III-IV
<i>Mean</i>	2.8	3.25
LVEF (%)	14-53 %	23-65 %
<i>Mean</i>	24.8 %	36.3 %
HFpEF	n=1	n=1
HFrEF	n=9	n=7
SCHFI Baseline		
Maintanence	79.9	78.4
Management	69.6	61.9
Confidence	77.8	69.7

NYHA-New York Heart Association Functional Class

LVEF- Left ventricular ejection fraction

HFpEF- Heart failure with preserved ejection fraction

HFrEF- Heart failure with reduced ejection fraction

Table 2:

Cost Effective Analysis of a HF Self-Care Management Program

Self-Care Program	Per Year
APRN (1 FTE)	\$ 120,000
Education Material	\$ 672.00
Miscellaneous	\$ 3,600.00
Total Costs:	\$ 124,272
Current Avg. Readmissions	165
Est. Avg. Reimbursement	\$ 2,145,000 ¹
Projected Avg. Readmissions	91 ²
Projected Est. Avg. Reimbursement	\$ 1,183,000 ¹
Total Cost Saving (-) Program Cost:	\$ 838,000

¹Based on CMS data mean cost of HF admission is \$ 13,000

²Projected reduction in readmissions by 45% based on RCTs

Figure 1:

Self-Care of Heart Failure Index (SCHFI) Scores Before & After Heart Failure Self-Care Management Program

SCHFI	Before	After
Maintenance	79.9%	87.5%
Management	69.6%	77.1%
Confidence	77.8%	86.6%

Figure 2:

Figure 3:

HEART FAILURE PATIENT SELF-CARE: AN EVIDENCE-BASED OUTPATIENT MANAGEMENT PROGRAM

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Purpose: The purpose of this evidence-based practice project is to incorporate an outpatient self-care management program for heart failure (HF) patients recently discharged from the hospital, to reduce hospital admissions and improve patient self-care.

Background: According to the American Heart Association, there are over 5 million people in the United States with HF and projections suggest its prevalence will increase by 46% through 2030. Heart failure is also the most common cause of hospital admissions in the United States for patients age 65 years and older. Despite health system improvements, national readmission rates remain high at 23%. However, significant evidence exists that HF self-care management programs can improve patient self-care and decrease HF related readmissions. While HF management focuses on ensuring evidence-based therapies are prescribed, providers often fail to assess the patient's and/or caregiver's ability and self-confidence to provide adequate self-care. Current guidelines recommend health professionals provide comprehensive HF education and counseling that is focused on knowledge, skills of management, and self-care behaviors. In the project facility, there was no educational outpatient HF self-care patient management program.

Practice Change: The purpose of this evidence-based project is to increase HF patient self-care knowledge and behavior by 10 % and reduce readmissions at a cardiology clinic in southern California. Brown and Ecoff's Evidence Based Practice Institute Model provides the foundation for the project. All participants discharged from the hospital with the diagnosis of HF were seen in the outpatient HF clinic within 14 days and were evaluated using the validated self-care of heart index questionnaire (SCHFI). One week after their outpatient discharge follow-up, each participant and/or caregiver received an individualized and structured one-hour educational nurse visit, utilizing the teach-back method, focused on improving HF self-care behaviors. Telephone follow-up support calls were made on a weekly basis for 5 weeks to assess self-care, address any barriers, and mitigate worsening symptoms. At the end of the program, self-care behaviors were reevaluated using the SCHFI. A chart review is completed to review readmission rates of participants at 30 and 60 days

Outcomes: In progress. It is anticipated that self-care scores of participants, using the SCHFI, will increase by 10% at completion of the program and readmission rates will be less than the national average of 23%.

Conclusion: Evidence-based outpatient HF self-care management programs can improve patient self-care knowledge and behaviors resulting in reduced readmission rates. Preliminary findings suggest a program led by an advanced practice nurse supports the need for individualized outpatient management programs designed to support and improve self-care behavior in HF patients.

AN EVIDENCE-BASED OUTPATIENT HEART FAILURE MANAGEMENT PROGRAM TO IMPROVE PATIENT SELF-CARE AND REDUCE READMISSIONS

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Background: According to the American Heart Association, there are over 5 million people in the United States with heart failure (HF) and projections suggest its prevalence will increase by 46% through 2030. Heart failure is the most common cause of hospital admissions in the United States for patients age 65 years and older, and despite health system improvements, national 30-day readmission rates remain high at 23%. Significant evidence exists that HF self-care management programs can improve patient self-care and decrease HF related readmissions. While HF management focuses on ensuring evidence-based therapies are prescribed, providers often fail to assess the patient's and/or caregiver's ability and self-confidence to provide self-care. Current guidelines recommend health professionals provide comprehensive HF education and counseling that is focused on knowledge, management, and self-care. In the project facility, there was no educational outpatient HF self-care patient management program led by an advanced practice nurse. The purpose of this evidence-based practice program is to improve patient self-care and reduce hospital readmissions.

Practice Change: All participants within 14 days post-discharge from the hospital with the diagnosis of HF, were seen in the outpatient hospital-based advanced HF clinic of a large hospital facility in Southern California, and were given the option to participate in a HF self-care educational program. Data were collected using the validated Self-Care of Heart Failure Index (SCHFI) before and after the program. Each participant was given a summarized educational brochure on heart failure self-care and scheduled for a follow-up one week later to receive an individualized and structured one-hour educational visit led by an advanced practice nurse student reviewing Krames "Living Well With Heart Failure" booklet. The teach-back method was used during these educational visits and the content focused on self-care behaviors. Weekly telephone follow-up support calls were made for 5 weeks to assess self-care, address any barriers, and mitigate any worsening symptoms. At the end of the program, self-care behaviors were reevaluated using the SCHFI. A chart review was completed to identify readmission rates of participants at 30, 60, and 90 days

Outcomes: 18 participants initially agreed to participate, 10 participants completed the 6-week program and 8 participants failed to attend follow-up educational visits and refused

further follow-up. Pre and post self-care scores using the SCHFI significantly improved in each category (maintenance 79.9% to 87.5%, management 69.5% to 90.8%, and confidence 77.8% to 86.6%). There were no 30-day readmissions and the 60 and 90-day readmission rate (20%) remained below the 90-day national readmission rate.

Conclusion: This outpatient HF self-care management program highlights the importance of evaluating patient self-care, individualized education, and telephone follow-up calls in order to reduce readmission rates. The outcomes support the need for individualized HF outpatient management programs led by advanced practice nurses.

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ABSTRACT

**AN EVIDENCE-BASED OUTPATIENT HEART FAILURE MANAGEMENT
PROGRAM TO IMPROVE PATIENT SELF-CARE AND REDUCE READMISSIONS**

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Statement of problem: UC San Diego's 30-day readmission rate for heart failure (HF) is 24.3%, higher than the national average of 22.7%. A post-discharge outpatient heart failure educational program did not exist within the outpatient heart failure (HF) clinics at UC San Diego and based on observation patients in the outpatient heart failure clinics lacked adequate heart failure knowledge and self-care.

EBP Model: EBPI Model 8A's model was used.

PICO Question: Does a self-care management program for heart failure patients improve self-care and reduce 30, 60 and 90-day hospital readmissions?

Description of Evidence-Based Innovation: An evidence-based HF self-care management educational program led by an advanced practice nursing student was implemented post hospital discharge. The program evaluated self-care, provided HF self-care education, and supported self-care through 5 weekly telephone supports calls.

Change Brought About By Innovation: 18 participants initially agreed to participate and 10 completed the program. Participants improved self-care (increase of 9.5% in maintenance, 10.7% in management, and 11.3% in confidence) and had no all-cause readmissions within 30 days of hospital discharge. Participants also had fewer readmissions at 60 and 90 days (20% readmitted within 60 and 90 days). The overall 4th quarter 2014 30-day readmission rate for HF during program decreased to 15.7 %.

Implications/Significance: This outpatient HF self-care management program highlights the importance of evaluating patient self-care, individualized education, and telephone follow-up calls in order to reduce HF readmissions. The outcomes support the need for an individualized HF outpatient self-care management program led by an advanced practice nurse at UC San Diego.

Professional Practice Model Alignment: This project aligns with the Joanne Duffy Quality Caring Model by providing individualized patient-centered care that is focused on improving individual and system outcomes in heart failure through education, psychosocial and disease management support, and improved relationships

Stakeholder Presentation

Heart Failure Self-Care Management Program (HFSCMP)

An Outpatient Evidence-Based Program

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DNP Student*

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UC San Diego
HEALTH SYSTEM

Background

National Data:

- > 5 million in US with heart failure (HF) & is projected to increase by 46% through 2030 (Heidenreich et al, 2013)
- **30-day readmission rate 22.7 %** (CMS, 2013a).
- 60-90 day readmission rate approaches **30%** (Heidenreich et al, 2013)
- HF patients lack adequate self-care management and maintenance skills (Jaarsma et al, 2013)

Facility Data:

- Project site: an advanced heart failure clinic in Southern California with **24.3% 30-day readmission rate** (CMS, 2013b)

Identified Needs

- Heart failure patients lack adequate self-care management and maintenance skills
- There is **no structured outpatient educational support program** for heart failure patients
- Outpatient nurses were not being utilized to their full practice authority and lack the tools necessary to aid in reduction of heart failure related readmissions

Aim/Purpose

- The purpose of this evidence-based practice project is to: Improve HF patient self-care and reduce readmissions by implementing a heart failure self-care management program (HFSCMP)

Evidence Base

- **Multiple RCTs** have demonstrated that outpatient educational based programs focused on improving self-care reduce heart failure readmissions. (Baker et al, 2011; Clark et al, 2014; Huntington et al., 2013; Gonzalez et al, 2014; Otsu & Moriyama, 2011; Tung et al, 2013)
- **Multiple guidelines** worldwide recommend health professionals provide education & counseling focused on knowledge and self-care skills and behaviors (Krum et al, 2011; Lainscak et al, 2011; Yancy et al, 2013)
- Self-Care of Heart Failure Index (SCHFI), created by Riegel (2009) has been used in multiple research studies to effectively measure changes in HF patient self-care and has been recommended for use (Vellone et al, 2013)

Self Care in Heart Failure

Self-Care of Heart Failure Model

(Riegel & Dickson, 2008)

Benchmark & Evaluation Methods

Benchmarks

- **Readmission benchmark:** <15% readmission rate at 30 days and < 30% at 60 and 90 days
- **Self-care benchmark:** 10% ↑ in SCHFI scores in each category
- **Cost benchmark:** Cost effectiveness analysis will reveal estimated cost savings exceeding \$500,000

Evaluation

- **SCHFI evaluated** self-care maintenance, management, and confidence before and after program
- **Chart review evaluated readmissions** 12 months prior to hospital admission and at 30, 60 and 90 days post discharge.

Clinical Innovation

- Evidence-based HF self-care management program (HFSCMP) implemented post hospital discharge
- Led by an advanced practice DNP student
- Baseline self care assessment using Self Care of Heart Failure Index (SCHFI)
- Krames FastGuide “Understanding Heart Failure” provided to all participants.
- 1-hour educational nurse visit 1 week after discharge follow up, reviewing Krames “Living Well With Heart Failure” workbook
- Five, 15-20 minute weekly telephone support calls assessing self-care and symptoms.
- Self-care reevaluated by SCHFI after program and 30-60-90 day readmissions evaluated.

Results

- **10:18 participants completed the program**, 8 participants failed to return for nurse visit & chose not to continue
- **Participants had no 30-day all-cause hospital readmissions**
- SCHFI scores in maintenance, management and confidence **↑ by 9.5, 10.7, and 11.3% respectively**, only maintenance did not achieve benchmark
- 60 and 90-day heart failure **readmission rate was 20%, below set benchmark of 30%**
- Projected yearly **cost savings** of self-care management program estimated at **\$838,000**, based on **15% readmission rate**

Self-Care of Heart Failure Index (SCHFI) Scores Before & After Heart Failure Self-Care Management Program

SCHFI	Before	After
Maintenance	79.9%	87.5%
Management	69.6%	77.1%
Confidence	77.8%	86.6%

Heart Failure Related Admissions by Individual HF Patient within Self Care Program at baseline, 30, 60 and 90 days

All-Cause HF Readmission Rates of Participants at 30, 60, and 90 Days

	30-Day	60-Day	90-Day
With program	0	20	20

Cost Analysis

Self-Care Program	Per Year
APRN (1 FTE)	\$ 120,000
Education Material	\$ 672.00
Miscellaneous	\$ 3,600.00
Total Costs:	\$ 124,272
Current Avg. Readmissions	165
Est. Avg. Reimbursement Lost	\$ 2,145,000*
Projected Avg. Readmissions	91*
Projected Est. Avg. Reimbursement Lost	\$ 1,183,000*
Total Cost Saving (-) Program Cost:	\$ 838,000

*Based on CMS data mean cost of HF admission is \$ 13,000

*Projected reduction in readmissions by 45% based on RCT

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Conclusions

- HF post-discharge self-care management program
 - **↑ patient self-care,**
 - **↓ 30-day readmissions,**
 - **↓ readmissions at 60 and 90 days**
- This program helped **reduce overall readmission rate to 15.7%**, which is consistent with a 45% reduction as reported in the evidence ^(8,13)
- Estimated **cost-savings annually** if self-care management program reduces 30-day readmission rate by 45% as previously reported in evidence ^(5,8)

Implications

- APRNs and RNs who are trained in HF self-care management should provide the leadership in developing a post hospital discharge follow-up to improve self-care behaviors, ↓ re-hospitalizations, & achieve cost-savings through prevention of non-reimbursable 30-day readmissions.
- As team members, APRNs and RNs should advocate for weekly post discharge telephone support calls as a component of a comprehensive HF discharge program to provide emotional support, identify barriers to self-care, & empower HF patients to ↑ self-care behaviors

Questions???