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**Reducing Hospital Readmissions through a Standardized Heart Failure
Educational Program for Community Based Nurse Case Managers**

A DNP Project Submitted to the
Graduate Faculty
of Jacksonville State University
in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Nursing Practice

By

Greta Abernathy

Jacksonville, Alabama

August 5, 2022

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Greta Abernathy August 5, 2022

Abstract

Background: Heart failure is a high-risk health condition that impacts a patient's heart, causing it to pump at a weaker pace than a healthier person's heart (Mayo Clinic, 2020).

Associated with frequent hospital admissions, heart failure affects millions of Americans in the United States (Fleg, 2018) and results in repeated readmissions, costing thousands of dollars per admission and decreased quality of life.

Purpose: This DNP project aims to implement an evidence-based educational model of care for nurse case managers within a community setting focused on Heart Failure (HF) that will improve the heart failure patient's ability to self-manage their disease process, reducing hospital readmissions.

Methods: This quality improvement project consisted of an educational program offered to all community-based case managers to educate them on heart failure to help patients self-manage their heart failure in the home environment.

Results: Key results included statistically significant reported a significant difference in the scores prior to the education ($M=16.19$ $SD=1.66$) compared to after ($M=18.03$ $SD=2.12$); $t(30)=-5.294$, $p<.001$. Of the 49 nurses who completed the pre-survey, 17 nurses did not complete the post-survey yielding a final sample size of 31.

Conclusion: This project revealed the importance of implementing a standardized HF education program for community-based case managers based on evidenced-based HF guidelines and self-management practices.

Keywords: heart failure, readmission patients, community-based case managers, coronary artery disease.

Acknowledgments

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Reducing Hospital Readmissions through a Standardized Congestive Heart Failure Educational Program for Community Based Nurse Case Managers

Hospital readmissions due to heart failure have caused a catastrophic event for an Already fragile healthcare system. Heart failure (HF) readmissions cost thousands of dollars per admission, and repeated admissions can decrease a person's quality of life. HF is a cardiovascular disease where the heart pumps at a weaker pace than a healthy person's heart. According to the Centers for Disease Control and Prevention (CDC) (2019), "HF affects millions of Americans within the United States" (CDC, 2019, p. 1). More than five million adults have heart failure in the United States (CDC, 2019). More than half of the patients diagnosed with heart failure dies within five years (CDC, 2019). The nation spends billions of dollars each year on patients with Heart Failure, including quality of life costs, healthcare service fees, medication costs to treat heart failure, and patients requiring time off from work (CDC, 2019). According to the Alabama Public Health (APH, 2019), in 2019, the heart disease mortality rate in Alabama was 64 deaths per 100,000. In 2013, over 12,000 deaths occurred from heart disease (APH, 2019).

This Doctor of Nursing Practice (DNP) project aims to reduce hospital readmissions in HF patients and improve their disease process and self-management practices. Evidence-based data shows that a lack of standardized educational HF programs for community-based case managers leave room for hospital readmissions. Community-based case managers serve as educators to patients and play a critical role in educating on best practices for HF patients (Fowler, 2012).

Background

The CDC estimated that 6.2 million adults in the United States of America have a diagnosis of HF (CDC, 2020). In 2018 the CDC estimated that 379,800 people died from HF (CDC, 2020). The CDC estimates HF cost 30.7 billion in 2012 (CDC, 2020). These include health care costs, medication costs, and the amount of time missed from work for employed individuals (CDC, 2020).

According to the CDC (2020), heart failure results when the heart cannot pump blood and oxygen to the organs in your body. An unhealthy lifestyle such as smoking, continuously eating foods high in fat, cholesterol, and sodium, lack of physical activity, and high alcohol intake can increase the risk of heart failure. Symptoms of heart failure are shortness of breath with activity, trouble breathing while lying flat, weight gain, and swelling in the legs, feet, ankles, and abdomen (CDC, 2020).

The role of a community-based case manager is to provide patient-centered care in the home setting (CMS, 2021). Community-Based Case Managers face challenges daily with poor collaboration with the primary care provider and challenges with the patient and or family member. The nurse must be able to help the patient follow the action plan approved by the primary care physician despite the barriers. Health care organizations thrive on developing educational programs that support self-care initiatives that help patients improve their quality of care. Evidence-based studies reflect that nurses require continued education on medication adherence, exercise, diet, daily monitoring, HF education standards of care, and self-management practices (Fowler, 2012; Fleg, 2018; Hobbs et al., 2016; Jayakody et al., 2016). These studies have documented increased patient health outcomes for patients with HF and decreased hospitalization utilization in the HF patient population, with value placed on a well-

educated community nurse (Fowler, 2012; Fleg, 2018; Hobbs et al., 2016; Jayakody et al., 2016). Studies also reflect that readmissions decreased after nurses attended HF educational programs (Fowler, 2012; Fleg, 2018; Hobbs et al., 2016; Jayakody et al., 2016). Participation in this HF education program will increase community health nurses' knowledge of HF (Fowler, 2012). The project will implement and evaluate a chronic care model focused on HF to reduce hospital readmissions.

Risk Factors

According to the CDC (2020), coronary artery disease (CAD) is a form of heart disease caused by plaque buildup in the arteries that supply significant organs. The leading cause of death in the United States is heart disease, with one person dying every 36 seconds (CDC, 2020). Symptoms of CAD are chest discomfort, weakness, shortness of breath, and pain in the arms or shoulder. CAD risk factors are obesity, lack of physical activity, smoking, and an unhealthy diet. CAD can be prevented through healthy eating, a consistent exercise regimen, smoking cessation, and a healthy weight (CDC, 2020).

Another leading cause of HF is high blood pressure. Nearly half the adults in the United States have high blood pressure, either high systolic blood pressure, defined as a blood pressure greater than 130 mmHg, or high diastolic blood pressure greater than 80 mmHg (CDC, 2020). High blood pressure is a leading cause-related to death in the United States, and uncontrolled blood pressure is standard among Americans. High blood pressure can first appear with no symptoms, and you must get it checked to know you have it. Uncontrolled blood pressure can lead to stroke, kidney disease, heart attack, and heart failure. High blood pressure can be managed with a healthy diet, weight, medication adherence, smoking cessation, and stress management (CDC, 2020).

This DNP project aims to implement an evidence-based educational model of care that displays competence in understanding key teaching points on medication adherence, exercise, diet, and daily monitoring. For patients to be successful in their home management of heart failure, they need to be well educated on the disease process.

Needs Analysis

Medicare Advantage companies are global health service companies that strive to improve patient population health. This company was founded in 1982 through a combination of two insurance providers. The need assessment within the writer's organization revealed a lack of staff education for community-based case managers. Within the Alabama market, from January to October 2021, there were 300 readmissions for HF and 50 readmissions in January, and 60 readmissions in February 2021. National Committee for Quality Assurance (NCQA) provides a framework for evidence-based best practices, and the community-based case management staff must be educated and qualified to deliver quality care in case management (NCQA, 2021). As the company began to grow in 1998, and it began to focus on health care and employee benefits; in 1999, it expanded internationally, and in 2004 it focused on retirement benefits. In 2018, the company merged to improve the affordability of medications for customers and employees. Throughout the years, the company continues to grow and advance; it is dedicated to serving its customers and meeting the needs of its employees (Cigna, 2021). The company prides itself on providing the right services, in the right setting, at the right time to address the patient's needs. The company currently employs 70,000 employees and is a global company that services 180 million customers in 30 countries (Cigna, 2021). The company's goal is to help improve the health care system through case management modules, promoting preventive health interventions, and improving health status (Cigna, 2021).

Problem Statement

Community-Based Nurse case managers promote self-management and are considered chronic disease coaches. Coaching is patient-centered and is focused on the needs of the patient. The nurse's role is to educate and coach the patient on Heart Failure and self-management; the nurse must be equipped with the knowledge of the disease process to help the patient gain the self-care skills to improve their quality of life and ultimately reduce HF hospital readmissions.

A literature review revealed that nurses require continued education on HF education standards of care (Fowler, 2012). Evidence-based data reveals that when value is placed on a well-educated community nurse, the results yield positive outcomes and decrease hospitalizations for vulnerable populations (Fowler, 2012). In addition, the literature review reflects that readmission rates decreased after nurses attended the HF educational programs (Fowler, 2012; Sterne et al., 2014). The goal was to increase the knowledge base of community-based case managers participating in the DNP project.

The DNP student developed a population, intervention, comparison, outcome, and time (PICOT) question-based on the need assessment and literature review and asks the following: for Community-based nurse case managers (P), what are the effects of an evidence-based heart failure education program aimed at improving the patient's ability to self-manage their disease process (I) as compared to the current generalized heart failure patient education (C) on reducing heart failure patient hospital readmissions (O) over 60 days (T).?

Aims and Objectives

The overarching aims of this project were to: (a) to increase nurse awareness and adherence to evidence-based heart failure education for patients identified with a diagnosis of heart failure to reduce hospital readmission; (b) to improve congestive heart failure education

among community-based nurse case managers to improve the patient's ability to self-manage their disease process, and (c) to address nurses learning needs of pharmacological and nonpharmacological interventions through continuous educational sessions to increase nurse case managers' knowledge of HF management.

Review of Literature

Analysis and synthesis of the literature were conducted for this DNP project. Best practice for providing educational instruction to HF patients exists, and community-based nurses play a pivotal role in delivering HF education to the patient in a case management program. A key to reducing readmission rates starts with nurses and their ability to educate HF patients on self-care management practices. An assessment can determine the strength of the nurse's knowledge.

The search engine databases used were CINAHL and PubMed, using master headings and mesh headings. The following key terms were used in CINAHL: heart failure, readmission patients, and community-based case managers, with 369 potential sources found through different term combinations. Results were narrowed to locate English language articles between 2012 and 2022, using peer-reviewed, academic journals limits, and reducing potential sources to ten findings. Additional 45 articles were eliminated due to content irrelevance of heart failure was not a risk factor for the patient, and if they were not available in full text or English.

The following Mesh key terms were applied in PubMed: heart failure, readmission patients, and community-based case managers, with six findings. The same inclusion and exclusion criteria were applied to these articles, and references to the selected papers were also searched and evaluated for application to the study question. Results were narrowed using limits of five years and numerical data to a total of six articles.

Many key findings from the literature review included surveys, systematic reviews, and guideline suggestions. Some of the significant key findings that were used to shape the methodology of this project are identified below. The literature review conducted by Fowler (2012) found that nurses are vital in educating patients on best practices of heart failure. The study also revealed that nurses need to know current protocols of heart failure management, including medication adherence, weight monitoring, when to notify the physician, dietary restrictions, and exercise (Fowler, 2012).

Reducing Hospital Readmission Rates

Jayakody et al. (2016) conducted a literature review which revealed that telephonic case management effectively reduced hospital readmission within 30 days in heart failure patients. Ten studies met the criteria (tested the effectiveness of telephone follow-up, objective to reduce hospital readmissions and readmission was defined as readmission), and five studies reduced readmissions within 30 days. The interventions included in the study were telephonic follow-up within seven days of discharge, dietary education, medication education, and a home visit. These findings show the importance of enhancing nurses' competency in patient education and conducting telephone follow-up (Jayakody et al., 2016). Upon my literature review, the articles aligned with my project due to the effectiveness of the intervention of telephonic case management in reducing hospital readmissions.

Nurse's Knowledge of Heart Failure

Willette et al. (2007) noted that patient education was essential, and nurses are the primary education providers to patients with heart failure. This study surveyed 49 nurses' knowledge of heart failure with a pre-and post-test assessment. The nurses scored the lowest on signs and symptoms and daily monitoring. The findings suggested that nurses may not

adequately educate patients with heart failure about self-management due to their lack of knowledge (Willette et al., 2007). Fleg (2018) conducted a literature review and noted a reduction in hospital readmissions when patients are enrolled in an HF disease management program. The systematic review included 13 randomized trials evaluating telephonic interventions, education, dietary instructions, and exercise. The literature review recommended enrolling patients in an HF education program upon hospital discharge to promote self-care and encourage follow-up with the provider. It is also recommended for adequate follow-up post-hospitalization, preferably within seven days post-discharge (Fleg, 2018).

Reducing Hospital Readmission Rates

A systematic review of the literature by Hobbs et al. (2016) identified three strategies to reduce hospital readmissions in patients with HF: telephonic case management, follow-up with the primary care provider, and patient education. The literature revealed that the above interventions effectively prevented hospital readmissions among patients diagnosed with HF. The literature suggests that we address effective interventions to reduce hospital readmissions among patients with HF while providing quality care. The literature also raises awareness of the gap in practice regarding the needs of HF patients and what the healthcare providers can do to close the gap (Hobbs et al., 2016).

Nurse's Knowledge of Heart Failure

Sterne et al. (2014) literature review assessed the nurse's knowledge of HF with a pre-test. The sample size included 45 nurses, and the paired sample t-test was used to analyze the statistics and determined a significant difference ($p < 0.001$) in the test scores (Sterne et al., 2014). The mean pre-test score was 73.8%, and the post-test score was 82% (Sterne et al., 2014). The readmission rate three months prior to the educational session was 25.4%, and three months after

was 9% (Sterne et al., 2014). The nurses participated in an educational session and tested their knowledge before and after it. Findings revealed that nurses gained additional knowledge from the educational session that helped educate the patients to self-manage and avoid hospital readmissions (Sterne et al., 2014).

Nurse's comfort level and frequency of delivering HF education

Using a descriptive, correlational design method, Albert et al. (2015) assessed the nurse's comfort level with delivering HF education in the hospital setting using a questionnaire. The sample size was 118 nurses, and results found that nurses were more comfortable delivering education on weight monitoring and least were comfortable delivering education on activity. Nurses were comfortable delivering education to patients on weight monitoring. Nurses were least comfortable delivering education to patients on signs and symptoms (71.5% +/- 29%) (Albert et al., 2015). The results concluded that the nurse's comfort levels varied in delivering patient education based on the self-care content and that nurses were the least comfortable delivering self-care education to prevent readmission. As the expectation is for nurses to educate patients on HF self-care, and they must be confident in the content (Albert et al., 2015). As nurses are the primary educators, the nurses ability and comfort level to educate patients about HF self-management is critical to this project. If the nurse is knowledgeable and well prepared, the patient will be confident enough to self-manage their HF in the home environment (Appendix A).

Theoretical Model

The theory utilized to guide this DNP student project was Lippitt's Phases of Change Theory. This theory helps translate research into practice and provided continuous education and implementation structure throughout this project. While it stresses the importance of personal

change, it also considers the change at an organizational level (Lippitt et al., 1958). The critical components of the theory task the researcher to (a) identify the problem; (b) evaluate the opportunity for change; (c) identify the change agents; (d) define the objectives for change; (e) define the change agent's role; and (f) keep the lines of communication and feedback open (Nursing Theory, 2020). The current study identified a problem with a needs assessment and evaluated the need to implement an educational program for community-based case managers on HF. The change agents are the Clinical Operations Director who can enforce the change and the training director can implement the change. I presented the findings to the Clinical Operations Director to support the need for the educational program, and I can work with the training director on the training material to add to the educational program.

Methodology

One of the aims of this DNP project was to improve community-based nurse awareness of evidence-based heart failure education programs to improve patient's' ability to self-manage their disease process. The primary intervention of this project was to implement and increase the utilization of a standardized heart failure education program for community-based case managers. The literature supports using best practices and guidelines to accomplish the project aims and objectives.

The Nurses Knowledge of Heart Failure Education Principles (NKHFEPE) Survey is a 20-item yes or no, true or false survey (Albert et al., 2002). The writer obtained permission to utilize the validated NKHFEP questionnaire tool by the author in the end user agreement and purchased it through AdeoExperts.com. The survey tests nurses knowledge of HF principles of self-care, diet, medication adherence, exercise, signs and symptoms, and daily monitoring (Albert et al., 2002). Six HF experts validated the survey and piloted it for reliability using registered nurses

(Albert et al., 2002). The NKHFEP Survey was emailed to participating nurses before and after each educational session with instructions to return to the Principal Investigator (PI). Participants were also asked to complete the evaluation survey of the overall educational session post-event. Nurses were educated on HF medication adherence, exercise, diet, weight monitoring, and reportable symptoms.

Setting

The specific setting is a Medicare Advantage company in a virtual setting. The primary patient focus is the case management department, where community-based nurse case managers coach and educate patients on chronic health conditions. Due to the pandemic, all sessions were delivered through a virtual learning environment, a virtual meeting modality, every week as scheduled by the DNP student. The Medicare Advantage company policy did not allow staff to return to the office setting, and community case managers were allowed to perform case management telephonically.

Population

The population of interest was community-based nurse case managers at a Medicare Advantage company. The nurses who worked on day shifts for one year or greater and held permanent positions were included in this project, and the day shift roster included 30 frontline staff who participated in direct case management daily. The PI and Nurse Managers were excluded because they did not meet the criteria of being frontline staff, making the sample size 30 nurses. Inclusion and exclusion criteria for DNP study participants are outlined in Table 1.

Recruitment

A flyer was developed and emailed to all community-based case managers, providing information on the educational sessions and training dates: February 22 and 24 (Appendix B).

The two educational sessions occurred within the same week to ensure staff coverage. A thank you email was sent to all the community-based case managers who attended the training sessions.

Consent

Informed consent was obtained from all study participants before project intervention (Appendix C). It was emphasized that this was a student-run project to standardize a Heart Failure Educational Program for Community-Based Nurse Case Managers. The PI running this project had no influence over administrative responsibilities concerning scheduling, staffing, evaluations, or promotions. It was conveyed to community-based nurse case managers that the Medicare Advantage company did not influence participation in this project. It was understood that the PI would maintain the privacy and confidentiality of all identifiable collected data. No penalty would occur for those who did not wish to participate, and a participant could withdraw from participation at any time during this project without repercussions.

Design

The quality improvement project used community-based case managers. The project began after Institutional Review Board (IRB) approval and started with a didactic program provided to all day-shift community-based case managers in two separate sessions. These sessions were offered through a virtual learning environment meeting during regular working hours. The PI ran two sessions; at the beginning of each session, the lesson plan (see Appendix D) was followed, and the purpose the objectives of the training sessions were discussed along with a background of the stated topic. The presentation proceeded with information on medication adherence, nutrition, exercise, weight monitoring, and reportable symptoms began. During the training intervention, the nurses asked questions, and knowledge checks were offered throughout the training. At the end of the training, all participants were emailed an evaluation

survey to return to the PI.

Before receiving the educational training, a pre-test survey was administered to test all participants' nursing knowledge of heart failure. A post-test survey was administered after the training session. Permission was granted to republish and re-print the document after the DNP student purchased the tool.

Risks and Benefits

There was minimal potential risk for any nurses participating in this project, which was a challenge to maintaining confidentiality. Any risk regarding confidentiality and survey responses was mitigated through the security of the survey results by the PI and assurance department that participation would not affect their job status. Benefits to staff nurses included improving standards of nursing care and patient outcomes.

The project adhered to all ethical standards required to protect the nurses involved in this study. First and foremost, this project observed the principles of non-maleficence and beneficence by acting in the best interest of the participants while minimizing or preventing harm. The principle of autonomy was respected by honoring participants' free choices to participate in the project. The principle of justice was promoted by treating all participants equitably, regardless of age, sex, religion, race, medical conditions, or insurance status. Overall, this project's core was to help enhance nurse and patient knowledge and broaden the utilization of resources to combat a deadly addiction.

Compensation

The PI expressed gratitude to the participants for their time completing the pre-and post-test and their participation in the virtual learning environment sessions.

Timeline

The pre-development stage of this DNP project began summer of 2020, and the clinical problem was defined through a needs assessment; the initial population, intervention, outcome, and timeframe (PICOT) were developed (Appendix E). A literature review was conducted with the already stated keywords for literature ten years old or less. During the development stage of the DNP project, the PICOT was revised, the preceptor packet was completed and submitted to the facility, a draft of the DNP project proposal was submitted for review and the literature review search continued for evidence to support HF educational program aimed at educating the nurses on HF. Hence, they are knowledgeable about HF and can apply it to provide comprehensive instructions to the patients on self-management of the disease process. The collaborative institutional training initiative (CITI) was completed (Appendix F), and a letter of support was obtained from my clinical site. Approval was obtained from the proposal evaluation review committee (PERC). The DNP project was submitted to the University (Institutional Review Board) IRB for approval and approval issued on December 3, 2021 (Appendix G). In the Spring semester of 2022, the DNP project was implemented within the clinical site. During the Summer semester of 2022, data was collected and analyzed, and currently, I am in the final stages of completing my manuscript.

Budget and Resources

The budget total for this DNP project was 599.00 (Appendix H). The cost for the statistician was \$350.00, and the NKHFEPs questionnaire cost \$249.00, and the user agreement allows the DNP student permission to re-print the tool for no more than three years at no cost to the student.

Evaluation Plan

Statistic Considerations

Descriptive statistics were used to describe the study population. A Statistical Package for the Social Science (SPSS) paired-sample t-test was conducted to compare nurses' knowledge of heart failure before and after evidence-based training. Analytical statistics were used to determine the efficacy of the project intervention. The statistical software package SPSS was used to complete the data analysis. The readmission data was extracted from the Medicare Advantage company's Tableau platform for analysis.

Data Maintenance and Security

Security of data collection was maintained throughout the DNP project. Nurses were provided with a randomized ID number by the PI, used on quality improvement evaluations. These IDs were randomized using a random number function through Excel and allowed the PI to compare pre-and post-survey results. The PI administered these surveys and the master list of ID codes and nurse names were kept separately from the actual surveys. Surveys were stored within a locked computer data file. Data were de-identified upon completion of data collection, and only de-identified data were used for the analysis. After the project was completed, the IRB was closed, and the final manuscript was completed. All data was destroyed following the Medicare Advantage company guidelines. Hard copies of data, including employee numbers and readmission rates, did not leave the secure company computer and were destroyed via the Medicare Advantage company policy.

Results

This section will review the results of the data analysis, including quantitative results from the nurse surveys and readmission rate data. Demographics are examined, and key findings

are highlighted (see Table 2).

Results of Chart Review

The Cleveland Clinic's Nurses Knowledge of Heart Failure Education Principles Survey was administered to nurses prior to receiving training and after to explore the impact of evidence-based training on nurse's knowledge of heart failure. Of the 49 nurses who completed the pre-survey, 17 nurses, did not complete the post-survey yielding a final sample size of 31.

A paired-sample t-test was conducted to compare nurse's knowledge of heart failure before and after evidence-based training. There was a significant difference in the scores prior to education ($M=16.19$ $SD=1.66$) compared to after ($M=18.03$ $SD=2.12$); $t(30)=-5.294$, $p<.001$ (see Table 3). These results support the inclusion of evidence-based training to improve the knowledge of community-based nurse case managers. Further supporting the implementation of evidence-based training, data shows that educating community-based nurse case managers on HF drastically reduces readmission rates. The Medicare Advantage company Tableau system data showed 25 readmits from February 22 to March 21, 2022, and this is a significant reduction compared to 84 readmits over the same period during the previous year.

A further examination of the data revealed that registered nurses (RNs) ($M=12$) had a slightly higher knowledge of heart failure than licensed practical nurses (LPNs)($M=10$); however, the two groups performed post-training similarly. Both groups lacked education concerning the signs and symptoms that patients may exhibit, and these questions were the most missed questions pre-and post-training. Although 67% of participants missed questions regarding signs and symptoms, only 10% requested additional information.

Discussion

Findings indicated a statistically significant increase in nurses' post-test scores ($p < 0.001$), suggesting increased nurses' knowledge of heart failure. This study adds to past research studies suggesting nurses learn from educational programs and positively impact patient outcomes (Sterne et al., 2014; Hobbs et al., 2016). The educational training addressed medication adherence, exercise, diet, and daily monitoring. The DNP project aimed to address the lack of an educational HF program for community-based case managers to help improve patient's ability to self-manage their disease process, reducing hospital readmissions. A collection of data was used to measure the ability of this project to meet the outcomes. Significant findings of this project include the statistically significant reduction in HF readmits from February 22 to March 21, 2022, compared to the previous year post-intervention. The pre-and post-survey results support the inclusion of evidence-based training to improve the knowledge of community-based nurse case managers.

Implications for Clinical Practice

The project's aims were met by demonstrating a decrease in HF readmissions post-intervention. This study can contribute to the existing evidence, which shows the importance of standardizing HF education programs for community-based nurse case managers. Standardization allows for ease and thoroughness in implementation, and training provides additional support and resources for nurses. These findings suggest that continuously educating nurses on HF decrease HF-associated readmissions.

Implications for Healthcare Policy

Previous studies and findings also showed limited educational resources for the community-based case managers who care for patients with heart failure. While preventing HF

readmission has been challenging for many years. The data results align with previous findings and show that HF standardized educational programs yield positive outcomes, which will result in the practice of care and healthcare policy revision.

Implications for Quality/Safety

This quality improvement study demonstrated the importance of education in preventing HF hospitalization readmissions. Quality of care and safety are essential factors in healthcare. Implementing a standardized HF education program for community-based case managers will allow organizations to influence the HF population positively.

Implications for Education

Evidence-based studies support the importance of HF education programs for nurses to reduce hospital readmissions (Van Spall et al., 2017). The study evaluation results complemented the project, and the feedback suggested more HF educational training beyond these mini sessions. The writer's recommendation for expansion of this DNP project is that organizations provide nurses with a standardized educational program on HF for community-based case managers to include instructions on medication adherence, exercise, diet, and daily monitoring and evolve it for other chronic diseases such as diabetes, and chronic obstructive pulmonary disease.

Limitations

The HF educational program was highly effective based on increased knowledge supported by the post-test results. The educational information on medication adherence, exercise, diet, and daily monitoring were not overwhelming or difficult to understand or retain. The HF education sessions were virtual, and the pre-and post-tests were distributed and returned via email. All participants did not return post-test forms and evaluation forms. The length of time

designated to implement and evaluate the project was limited.

Dissemination

The findings of this research study were disseminated through the three P's: poster, presentation, and paper. The DNP Project was presented via poster and short presentation at the University's Annual Research Day on July 15, 2022. The DNP student presented findings to the clinical site's Medicare Advantage company leadership staff. Additionally, the DNP manuscript was submitted to the Jacksonville State University Digital Commons repository.

Sustainability

After implementing this project, the likelihood of sustainability is high as this project aids in increasing the knowledge and confidence of community-based case managers to improve patient outcomes and reduce HF hospital readmissions. Throughout the project, the support from leadership was outstanding, as the need to reduce HF hospital readmissions has been a concern. The writer recommended that the organization develop a standardized, evidence-based HF educational program for community-based case managers to equip them with the additional knowledge needed to educate patients and prevent HF readmissions.

Plans for Future Scholarship

The DNP project adds to existing data supporting the need for an evidence-based HF education program for community-based case managers that aids in reducing hospital readmissions. Additional research is needed to evaluate the sustainability of the project. Also, further research can evaluate other educational programs the organization can implement.

Conclusion

The goal of the DNP project was to develop an evidence-based HF education program that would increase community-based case managers' knowledge of self-care management

practices to improve patient outcomes and reduce hospital readmissions. Statistical data from this DNP project shows that it would be beneficial in the future to conduct a study with the organization to measure long-term outcomes related to hospital readmissions. The volume of nurses that received formal training benefited from the knowledge gained on the disease process of heart failure. The program provided an easy-to-understand overview of what nurses should know regarding five areas of self-care management practices. A quality program will improve clinical practice and potentially reduce 30-day hospital readmissions. This program can potentially decrease mortality rates and lessen the economic burden on the United States healthcare system.

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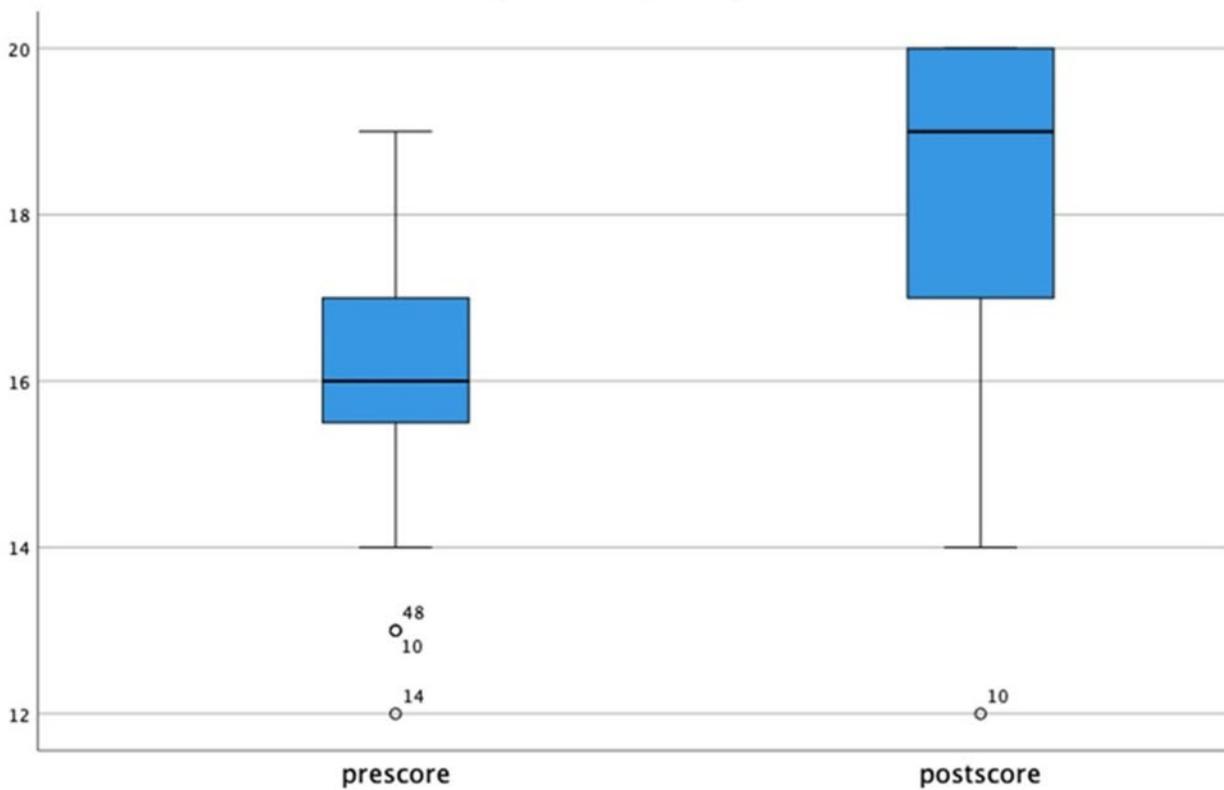
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Table 1*Inclusion and Exclusion criteria for nurses*

Inclusion criteria for nurses	Exclusion criteria for nurses
A Medicare Advantage company employs all community-based case managers.	Management
Full-time registered nurses	Non-full-time employees
Full-time licensed practical nurses.	Registered Nurses and Licensed Practical. Nurses working the late shift.

Table 2*Pre- and post- nursing survey results*

Appendix A

Table of Evidence: Reducing Hospital Readmissions through a Standardized Heart failure

Educational Program for Community Based Nurse Case Managers

Clinical Question:

For Community Based Nurse Case Managers (P), what are the effects of an evidence-based heart failure education program aimed at improving the patient's ability to self-manage their disease process (I) as compared to the current generalized heart failure patient education (C) on reducing heart failure patient hospital readmissions (O) over 60 days (T)?

Article #	Author & Date	Evidence Type	Sample, Sample Size, Setting	Study findings that help answer the EBP Question	Limitations	Evidence Level & Quality
1	Fowler, Susan (2012)	Quasi-experimental study	61 nurses attended the half-day educational program about HF working in the community.	1) Nurses needed more education on salt substitutes, assessing weight results, and notification of physicians concerning patient blood pressure readings, dizziness, and lightheadedness. 2) Heart failure education improves nurses' knowledge about HF education.	1) Small convenient sample size of nurses participating. 2) Education did not target knowledge deficits identified in pre-testing	Level II Quality: B
2	Jayakody, Amanda; Bryant, Jamie; Carey, Mariko; Hobden, Breanne; Dodd, Natalie; & Sanson-Fisher, Robert (2016)	Systematic Review	Databases accessed: MEDLINE, the Cochrane Library, and EMBASE. Timeframe: A database search was conducted for articles published from database inception to May 19, 2015.	1) Readmissions were reduced with patient education. 2) Nurses in the home providing the education and one telephonic follow-up patients were without readmission for heart failure.	1) The study did not have a meta-analysis. 2) Study had low quality and lacked detail.	Level II Quality: B

			Keywords: Patient readmission, telephone follow-up, Chronic disease			
3	Willette, Elizabeth; Surrells, Danielle; Davis, Leslie; Bush, Charles (2007)	Descriptive correlational design	Sample size 49 nurses on a telemetry unit in the southeastern United States. Twenty true/false questions in the form of a survey. Three questions on diet, seven questions on fluid volume, six questions on signs and symptoms, two questions on medications, and two questions on exercise.	1) 49 nurses agreed to participate, and 16 worked in the cardiac care unit and 32 in telemetry. One did not specify which department. The data reflects t h a t more education is needed for nurses to educate patients adequately on self- management.	1) Lack of sample size.	Level III Quality: B
4	Kath-Hobbs, Joanne; Escutia, Diana; Harrison, Haley; Moore, Amy; & Sarpong, Evelyn (2016)	Systematic Review	Databases accessed: CINAHL, PubMed, Cochrane, and Medline. Timeframe: 2000-2015 Keywords: Heart failure; hospital readmission; medical residency; documentation, quality improvement, systems-based practice 45 registered	1) Improved self- care adherence. 2) Readmissions decreased with structured telephonic follow-up after discharge 1)The 30-day readmission	1) The sample size was small. 2) Only one hospital could verify admission.	Level: III Quality: B
5	Sterne, Priscilla; Grossman, Sheila; Migliardi, Sue; Swallow, Anne (2014)	Pretest and posttest design	nurses attended the educational program and completed the	three months before the educational program for nurses was	1). Sample size. 2). Timeframe was short	Level: III Quality: A

			pre-test and post-test.	25.4%, and following the intervention, it was 9%. 2) The most essential information for patients was diet, fluid, weight management, and medications.		
6	Albert, N., Cohen, C., Xiaobo, L., Best, C., Aspinwall, L., & Pratt, L.	Descriptive, correlational design and questionnaire method	The sample size was 118 nurses, and results found that nurses were more comfortable delivering education on weight monitoring and least comfortable delivering education on activity. Also, with a questionnaire.	Nurses were comfortable delivering education to patients on weight monitoring. Nurses were least comfortable delivering education to patients	Sample size.	Level III Quality B

Appendix B

Participant Recruitment Flyer

Participants Needed for a DNP Nursing Project

PURPOSE:

Educate nurses using evidence-based training material to help patients self-manage their heart failure in the home environment. A questionnaire will be emailed to each participant before and after each educational session. Also, an evaluation survey will be emailed to each participant at the end of each educational session.

WHO:

All Community Based Case Managers. Participation is voluntary.

WHAT:

Attend a 30-minute virtual education session

WHERE:

Via a Virtual Learning Environment

WHEN:

Two 30-minute virtual educational sessions will take place to accommodate staff schedules

DATE:

To be determined

****If interested, please contact Greta Abernathy, MSN, RN****

gabernathy@stu.jsu.edu



Appendix C

Informed Consent for Participation

Study Title: Standardizing a Heart Failure Educational Program for Community Based Nurse Case Managers

Principal Investigator: Greta Abernathy, MSN, RN

This consent form is part of an informed consent process for a DNP student project, and it will provide information that will help you decide whether you wish to volunteer for this project. It will help you to understand what the study is about and what will happen during the project.

If you have questions at any time during the project, you should feel free to ask them and expect to be given answers that you understand entirely.

After all your questions have been answered, you may complete the attached survey and participate in the educational session if you still wish to participate in the project.

You are not giving up any of your legal rights by volunteering for this research project.

Why is this project being done?

This project aims to address the lack of consistency in Heart Failure education within a case management community setting. This project plans to reduce hospital readmissions in Heart Failure patients and improve their ability to self-manage their disease process. The study will run for two months with an estimated thirty nurse participants. There will be two 30-minute virtual educational sessions to accommodate staff schedules. The educational session will incorporate education on heart failure medication adherence, exercise, diet, weight monitoring, and reportable symptoms. A questionnaire will be emailed to the participants before and after each educational session. At the end of each educational session, an evaluation survey will be distributed to the Community Based Case Managers via email for completion with instructions to email back to the PI.

What will you be asked to do if you take part in this research project?

The PI will survey before attending an education session on the current Heart Failure Educational sessions within the case management community setting. The educational sessions will be provided virtually and last approximately 30 minutes. A post-survey will be administered after each educational session, and participants will be asked to evaluate the educational session they participated in.

What are the risks or discomforts you might experience?

No expected harm can occur from participating in this study. This project has no influence or involvement from upper management, and participation is voluntary. Upper management will be excused from participation and not provided any information regarding survey results or nurse participation in this project.

Will it cost me anything to participate? Participation in this project is of no cost to you.

How will information about you be kept private or confidential?

All efforts will be made to keep your personal information in your research record confidential, but total confidentiality cannot be guaranteed.

What will happen if you do not wish to participate in the project or if you later decide not to stay in the project?

Participation in this project is voluntary. Suppose you do not want to enter the project or decide to stop participating. You may choose not to participate, or you may change your mind at any time. In that case, your relationship with the study staff will not change, and you may do so without penalty and without loss of benefits to which you are otherwise entitled.

You may also withdraw your consent for the use of data already collected about you, but you must do this in writing to Greta Abernathy at gabernathy@stu.jsu.edu

Who can you call if you have any questions?

If you have any questions about taking part in this project you can call the principal investigator:

Greta Abernathy, MSN, RN
gabernathy@stu.jsu.edu

I have read this form and the research study has been explained to me. I have been given the opportunity to ask questions and my questions have been answered. If I have additional questions, I have been told whom to contact. I agree to participate in the research study described above and will receive a copy of this consent form after the PI signs it.

Printed Name of Subject

Signature of Subject

Date

Signature of Investigator

Date

Appendix D

Lesson Plan

Learning Objectives:

1. Discuss the definition of heart failure.
2. Explain the significance of the problem related to mortality rates and economic healthcare burden.
3. Demonstrate knowledge in five areas of self-care management practices.

Total Time: Min	Activity
5 minutes	Welcome Briefing 1. Purpose 2. Learning Objectives
5 minutes	Background Survey & Review
20 minutes	Education Intervention: Heart Failure Guidelines & Self-Management Practices Presentation/Lecture by Greta Abernathy 1. Medication Adherence 2. Exercise 3. Diet 4. Daily Monitoring 5. Reporting Symptoms
	Intervention Evaluation

Supplies Needed:

- Virtual learning environment meeting room.
- Printed Materials: Pre/Post-test survey.

Appendix E

DNP Project Timeline

Semester	Pre-Development Stage	Development Stage	Implementation	Evaluation
Summer 2020	<p>Define clinical problem.</p> <p>Develop the initial PICOT</p> <p>Complete an initial Review of the Literature.</p>			
Fall 2021		<p>Revised the PICO(T) Question</p> <p>Completed preceptor packet.</p> <p>Draft of Project Proposal</p> <p>Continued literature review supports evidence on an evidence-based CHF education program aimed at improving the patient's ability to self-manage their disease process for nurse case managers.</p>		

		<p>Completed CITI training.</p> <p>Obtained letter from preceptor and clinical site supporting project.</p> <p>Obtained PERC Approval.</p> <p>Submit IRB Approval and obtain approval.</p>		
Spring 2022			Implement DNP Project	
Summer 2022				<p>Collect Data & Analyze Data.</p> <p>The final presentation of the manuscript.</p>

Appendix F

CITI Training Certificate



Completion Date 25-Sep-2021
Expiration Date 24-Sep-2024
Record ID 45305934

This is to certify that:

Greta Abernathy

Has completed the following CITI Program course:

Not valid for renewal of certification
through CME.

Social and Behavioral Responsible Conduct of Research

(Curriculum Group)

Social and Behavioral Responsible Conduct of Research

(Course Learner Group)

1 - RCR

(Stage)

Under requirements set by:

Jacksonville State University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w239ba317-c65d-49dd-8a85-dba404e3dd1b-45305934

Appendix G

University IRB Approval



Institutional Review Board for the Protection of Human Subjects in Research
203 Angle Hall
700 Pelham Road North
Jacksonville, AL 36265-1602

December 3, 2021

Greta Abernathy
Jacksonville State University
Jacksonville, AL 36265

Dear Greta:

Your protocol for the project titled "Reducing Hospital Readmissions through a Standardized Heart Failure Educational Program for Community Based Nurse Case Managers" 12032021 has been granted exemption by the JSU Institutional Review Board for the Protection of Human Subjects in Research (IRB).

If your research deviates from that listed in the protocol, please notify me immediately. One year from the date of this approval letter, please send me a progress report of your research project.

Best wishes for a successful research project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Lynn Garner', written in a cursive style.

Lynn Garner
Associate Human Protections Administrator, Institutional Review Board

Appendix H

Budget

Item	Budget	Actual Cost
Statistician	0.00	\$350.00
Final Bound Copy of Project Manuscript	\$200.00	\$0
Questionnaire	\$249.00	\$249.00
Total Cost:	\$449.00	\$599.00