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## Improving Medical-Surgical Nursing Knowledge of Congestive Heart Failure

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*Walden University*

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# Walden University

College of Nursing

This is to certify that the doctoral study by

Sylvia R. Cunningham

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Walden University

2022

Abstract

Improving Medical-surgical Nursing Knowledge of Congestive Heart Failure

Management

by

Sylvia Cunningham

MSN, Walden University, 2017

BSN, Webster University, 2000

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

November 2022

## Abstract

The purpose of this Doctor of Nursing practice project was to address the nursing gap in knowledge about congestive heart failure (CHF) management. Lack of staff knowledge on this topic inhibits their ability to educate patients. Poor patient understanding can lead to frequent readmissions and poor patient outcomes. The project aim was to determine if educating medical-surgical nurses about CHF management increased their knowledge of topic. The ADDIE model was used to design staff education. Lewin's change theory guided the project. Nine registered nurses attended a power point presentation. A pre-education questionnaire was distributed, and participants created unique identifiers. The same questions were used on the post-education survey to determine knowledge gained. Comparing the data from the pre-education survey ( $M= 2.33$ ,  $Mdn = 2.00$ ) with the data from the post-education survey ( $M = 2.33$ ,  $Mdn = 2.00$ ) showed no improvement in the staff's knowledge after attending the class. However, the site for the staff education changed during this project. The original site was lost, and the final site was not experiencing the same education gap. Recommendations and implications for practice include using the same power point presentation targeted to a unit that treats CHF patients and with staff that need the education. Although the results did not show significant knowledge gain, social change implication of this study may arise from that the nurses who attended the training received the latest evidence-based information about CHF management, and this is likely to improve their ability to educate their patients, which can still result in better patient self-management and outcome.

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## Dedication

This dedication is to my four children: Elizabeth, Leslie, Louis, and Charles. I tried to provide a foundation that promoted nurturing, love, and strength while raising my children and emerging myself into a path of professional development. I had to expand my roles as a mother to include the many facets of self that were developing as a student and nursing professional. It wasn't easy raising a family and being the breadwinner and experiencing the growing pains of my children and myself. At times it was a very difficult to manage my responsibilities as a mother, nurse, and student. I never lost faith or hope, and I've always loved my children. I thank GOD for being the light on my journey and allowing me the chance to observe the development of each of my children as they grow and develop into adults. I do have a regret, it's the limited amount of time I spent with them. I wish I could have been home every day caring for them and attending every function in their lives, but I did my best. They flourished to become respectful and responsible adults, and I thank GOD for being the driving force in my life and allowing me to have four wonderful children. I don't believe my children know how much they contributed to supporting me on my academic journey. I deeply love each of my children and I thank each for the inspiration, love, and support they contributed to my life and my achievement of this Doctor of Nursing Practice degree.

## Acknowledgments

I would like to thank my parents, William, and Betty Blackshear, for being loving and supportive parents. I am sorry that they are not physically with us to celebrate the completion of my DNP journey. I would like to thank two of my instructors. The first one is Dr. Janet Sphere, who has been my mentor and clinical instructor as I achieved my BSN, MSN, and a portion of my DNP degree. In addition to Dr. Melissa Rouse, she electronically stood by my side; she listened, supported me, and allowed me to cry on her shoulder while I took this journey. When I think about Dr. Rouse, it brings tears to my eyes, and I would like to reach out and hug her and say THANK YOU for CARING!

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## Section 1: Nature of the Project

### **Introduction**

Heart failure (HF), also known as congestive heart failure (CHF), is the most common cardiovascular health problem associated with poor quality of life and adverse outcomes (Rossignol et al., 2019). According to the National Healthcare Quality and Disparities Report (2022), deaths per 1,000 adult hospitalized patients with HF are estimated at 424.1 and benchmark at 220.9. Much of the health care utilization costs, mortalities, and readmissions of CHF patients are preventable (Cui et al., 2019). According to Urbich et al. (2020), “the annual total cost of care for CHF in the US is projected to increase to \$69.7 billion by 2030” (para. 1). Urbich et al., (2020) also noted that the cost of care (direct and indirect) for CHF in the United States in 2020 was estimated at \$43.6 billion, with 70% of expenses attributed to medical costs and readmission (para.1).

Although medical-surgical nurses commonly care for patients with CHF, research has indicated that these nurses often lack understanding of the pharmacodynamics of diuretic therapy (Felker & Greene, 2021, para. 2). Promoting medical-surgical nursing education related to diuretics will allow nurses to better care for CHF patients (Islam, 2018). The lack of proper monitoring of diuretics in CHF patients can lead to adverse results, like fluid overload, shortness of breath, and dehydration, and life-threatening events, such as HF(Felker & Greene, 2021, para.2). Educating nurses on this topic will lead to positive social change through promoting better health outcomes for patients, thus improving their quality of life. Implementing a staff education will ultimately reduce

readmissions, promoting positive social change for the organization and the community (Felker & Greene, 2021, para. 2).

### **Problem Statement**

In the medical-surgical/cardiac step-down unit of the project site hospital in the southeastern United States, the high rate of readmissions of CHF patients was identified as a problem. The nurse manager indicated the 30-day readmission rates for CHF patients had increased to 34.5% in 2022 compared to 23.9% in 2021. The discharged CHF patients were returning to the emergency room within 1–5 days and readmitted to the medical-surgical unit with a diagnosis of CHF fluid overload. In surveys administered to CHF patients through a get-well education network, patients rated the nurses with a low score regarding the discharge education related to CHF they received as patients. The project site believed that there was a gap in the staff's knowledge about the use of diuretics and fluid volume management, as indicated by the past 5 years of CHF discharges and readmissions for fluid overload, resulting in the nurses' not being able to effectively educate their patients. Nurses need to understand how diuretics function with CHF to educate patients on the self-administration of diuretics for improved quality of life.

### **Purpose Statement**

The practice-focused question for this staff education project was: Does education of medical-surgical nurses increase their knowledge of CHF management? The goal of the project was to implement a staff education for medical-surgical nurses to better equip them to provide CHF patients with quality education that will likely increase patient CHF

self-management and compliance, likely resulting in fewer readmissions and better outcomes for patients, improving their quality of life.

### **Nature of the Doctoral Project**

I completed a literature review on the topic using the Google Scholar search engine; Joanna Briggs Institute Database of Systems; and the CINAHL, PubMed, Sage Journal, and Science Direct databases. These search engines and databases were accessed through the Walden University Library. The key search terms included *congestive heart failure, nurses' knowledge, patient education, nursing education, self-care management, diuretics, fluid balance, fluid restriction, and dry weight*. I used the analysis, design, development, implementation, and evaluation (ADDIE) model as the theoretical framework for this staff education project. All sources included in the literature review were published within the last 5 years.

An expert panel of four members reviewed the education content and surveys, and I made revisions based on their feedback. Before the staff education session, a pre-education survey was administered to identify the participants' knowledge about CHF management topics, such as diuretics, fluid restriction, fluid balance of Input & Output, (I & O's) and monitoring dry weight. A Microsoft PowerPoint slideshow was presented to improve staff knowledge of CHF management. The same survey questions were asked at the end of the class as a post-education survey. I compared the pre- and post-education survey scores to determine if there was an improvement in staff knowledge related to CHF management.

### **Significance**

The project team included a medical director of CHF, a nursing academic affiliation coordinator of nursing education, a nurse manager, the assistant nurse manager, the program director of simulation and developer of CHF unit, a nurse practitioner, a dietitian, and a registered nurse (RN) specializing in CHF. There was also an expert panel of four project team members consisting of the director of advanced HF program, doctor of the simulation clinic and developer of the CHF unit, doctor of affiliation coordination of education, and nurse manager of CHF interventional radiology that reviewed the education content and surveys. I revised both based on their feedback. CHF team members provide patient education to meet the dynamics of lifestyles changes and the long-term management of CHF to promote quality of life. Implementing a staff education for medical-surgical nurses can better equip them to provide CHF patients with quality education that the patients can understand and follow. Increasing nurses' knowledge of CHF management will lead to positive social change for both the nurses and CHF patients. Patients will be positively impacted by receiving better education to self-manage CHF. The staff education project can be disseminated throughout other areas of the health care systems (e.g., new employee orientation, CHF clinics, medical-surgical units, cardiac units, critical care, emergency departments, etc.), and this will lead to better patient outcomes, improving their quality of life. Implementing the staff education project will ultimately reduce readmissions, which also promotes positive social change.

## **Summary**

HF, also known as CHF, is the most common cardiovascular health problem associated with poor quality of life and adverse outcomes (Rossignol et al., 2019). Although medical-surgical nurses commonly care for patients with CHF, research has indicated that these nurses often lack understanding of the pharmacodynamics of diuretic therapy (Felker & Greene, 2021, para. 2). In Section 2, I will discuss the background and content of the project.

## Section 2: Background and Context

### **Introduction**

HF, also known as CHF, is the most common cardiovascular health problem associated with poor quality of life and adverse outcomes (Rossingnol et al., 2019). The practice-focused question I sought to answer in this staff education project was: Does education of medical-surgical nurses increase their knowledge of CHF management? Medical-surgical nurses commonly care for patients with CHF, and the literature suggests that that these nurses often lack understanding of the pharmacodynamics of diuretic therapy (Felker & Greene, 2021, para. 2). I used a variety of databases and sources for the development of this staff education project. The research identified that nurses on the medical-surgical floor could increase their levels of knowledge through being better educated on administering diuretic, managing care, monitoring, and charting fluid balances, teaching essentials of self-managements principles, and recognizing warning symptoms and deteriorations in the health condition of CHF patients for better patient outcomes. (Felker & Greene, 2021)

### **Concepts, Models, and Theories**

The concepts used in this project include clinical decision-making, safety, health promotion, and quality of life. The ADDIE framework and Lewin's theory of change were foundational for the development of this staff education project these metrics to medical-surgical nurse staff education allowed me to develop the education session to focus on addressing the gaps in nursing. These same fundamental metrics were used to

measure if the desired outcome of the medical-surgical education was beneficial to promoting patient quality of life (see Muldoon, 2020).

According to Stephen et al. (2021), the ADDIE model design has five interrelated phases: analysis, design, development, implementation, and evaluation. The framework provides flexible guidelines for instructional design in the creation of practical educational content. During World War II, the ADDIE model was first used for military training to analyze and evaluate effectiveness in training outcomes (Allen, 2006; Stephen et al., 2021, p. 3). The designers visualized abstract learning theories and used such ideas in real-world applications. According to Stephen et al., the ADDIE model draws on multiple disciplines, including the systems approach method, process improvement, system engineering, and behavioral and cognitive psychology. In addition, this model can be used to identify and address gaps in educational and training materials (Kurt, 2018; Stephen et al., 2021).

According to Hussain et al., (2018) Lewin's theory of change comprises three stages: unfreezing, moving, and refreezing. In terms of this project, the problem identified during the unfreezing stage



the high rate of CHF patients being readmitted. During this phase, I presented the participants with a pre-education survey to assess their medical-surgical nursing knowledge of CHF management before any education was provided. In implementing the project during the moving stage, I presented an in-service education session on CHF management (with topics such as dry weight, diuretic medicine, maintaining care, monitoring, and charting fluids input and output balances in the form of a PowerPoint presentation. During the refreezing phase, a post education survey was administered to the participants with the same questions that were presented during the unfreezing stage. This allowed me and the preceptor to compare the answers between the two surveys and determine if the medical-surgical nurses had an improvement in knowledge and were then better equipped to provide CHF patients with quality education. The refreezing stage will need to continue to be provided by the unit leadership to ensure that the nurses implement the content they have learned, but this is outside the scope of this project (see Hussain et al., 2018).

### **Relevance to Nursing Practice**

According to Albert et al. (2002, as cited in Kuchenrither, 2021) conducted a study to evaluate the impact of a nurse-led education program on the patient self-management and hospital readmissions of CHF patients. The Nurses' Knowledge of Heart Failure Education Principles Survey used to assess nurses' knowledge of HF self-management education by using true or false surveys. The project outcomes supported previous findings that nurses caring for patients with HF may not have sufficient

knowledge regarding essential HF self-management principles of care. By improving nursing knowledge about this topic with the current project, the nurses on the medical-surgical floor will be better educated about the essential of HF self-management principles, and this will potentially empower their CHF patients to make informed decisions related to diuretic management, leading to improved patient outcomes.

Mu et al. (2019) conducted a CHF fluid balance audit using the Joanna Briggs Institute Database of Systemic Review. Pre- and postimplementation audits determined an improvement in documentation of fluid balance monitoring of I & O'. They hypothesized that the incongruence maybe due to inaccurate knowledge deficit of the nurses recording of intake and output documentation. Maintaining records of patients' fluid intake and output is vital to monitoring hydration status. The researchers concluded that an increased awareness of maintaining fluid balance I & O charting among nursing staff on the unit demonstrated how audits and focused education could have an immediate positive impact on clinical outcomes. By improving nursing knowledge about this topic in the current project, the nurses on the medical-surgical floor will be more aware of the importance of fluid balance monitoring and documentation, which will result in improved practice when caring for this patient population. The current doctoral project advances nursing practice by filling a gap-in-practice as revealed in the literature.

### **Local Background and Context**

In a morning meeting, the nurse manager at the project site expressed a concern related to the high increase in CHF patient readmissions and indicated that research has showed that nurses are not properly educating CHF patients during discharge. Review of

data from the medical-surgical unit from 2016 to 2021 clearly indicates the increase in readmissions of CHF patients after discharge (i.e., 20.4%, 23.3%, 25.1%, 19.6%, 23.3%, 26.6%, 29.9%, and 34.5%) to this unit. The gap in practice indicates this medical-surgical unit has a higher readmission rate of CHF patients. Then in previous years, I developed this project with the belief that increased education will help the nurses to educate their patients better, thus resulting in fewer readmissions.

The project site is a federal health care hospital in the southeastern United States. There were 21 RNs, four certified nursing assistants, and two nursing assistants on the medical-surgical unit of the project site. Once finalized and if found to be effective at increasing education, the content can be disseminated throughout the federal health care system (e.g., CHF clinics, telehealth, etc.).

According to Albert et al. (2002, as cited in Kuchenrither, 2021) the nurse-led education program evaluated the impact of the patient self-management and hospital readmissions of CHF patients. Their project outcomes supported previous findings that nurses caring for patients with HF may not have sufficient knowledge regarding essential HF self-management principles of care. Krówczyńska and Jankowska-Polańska (2022) evaluated nurses' knowledge of patient education in general and topic-specific perceptions of basic information important for CHF self-care and the implementation of educational tasks in the care of patients with CHF (para. 1). They concluded that cardiology nurses' knowledge of CHF self-care principles regarding patient education was satisfactory but not with all mandatory issues. Nurses were not sufficiently prepared to provide patients with education on CHF self-care related to recognizing warning

symptoms and deteriorations in health conditions and the administration of medications. Chi et al. (2022) conducted a systematic review to identify “nurses’ knowledge of heart failure self-care education according to the topics and factors that would be substantial to increase their knowledge” (para. 1). They concluded that critical care nurses’ level of knowledge was unsatisfactory and that they needed more in-depth learning and understanding of HF.

The current project supports Walden University’s mission of positive social change by increasing nurses’ knowledge and improving their ability to teach patients. Improving patient education will allow CHF patients to better manage their disease process and positively enhance their quality of life.

#### **Role of the Doctor of Nursing Practice 08-23-22-0453386S**

My role as the Doctor of Nursing practice (DNP) student was to be the leader for the project. I began the project by conducting a literature review using literature published within the last 5 years. I collaborated with the project team, including a CHF medical director, the nursing academic affiliation coordinator, the nurse manager, the assistant nurse manager, the program director of simulation, the developer of the CHF unit, a nurse practitioner, CHF dietitians, and a RN. A pre- and post-education survey was developed with the project team. I also created a PowerPoint presentation to improve staff knowledge of CHF management. After an expert panel review of the education session content, I revised the surveys and presentation using their feedback. After presenting the education session to the participants, I compared their pre- and poste-

education survey scores to determine if there was an improvement in staff knowledge related to CHF management.

I selected this topic because my family has a high incidence of CHF, and my mother was diagnosed with CHF. After being diagnosed, my mother was frequently readmitted within the first year. My father became my mother's care provider utilizing the resources available in the community and local library for CHF care instructions. My father was present at each of my mother's doctor appointments with written records of my mother's progress. My mother's doctor was astonished by my mother's progress. As a result of my father educating himself about CHF to care for my mother, the frequent readmission decreased. My father stated, "If the hospital would have provided discharge instruction and CHF information when she was first diagnosed, they would have been better suited in managing this diagnosis." My mother's sisters, who were also diagnosed with CHF, did not have the quality of life that my mother, and one died 3 months after being diagnosed, and the other 6 months later.

### **Role of the Project CHF Team**

I created a PowerPoint presentation and distributed to the project team members. An expert panel of four project team members reviewed the documentation of the presentation and pre- and post-education surveys. The team members used their expert knowledge related to the health care arena when reviewing the content and providing feedback. I made revisions based on their comments. Having the expert panel review the medical-surgical nursing education related to CHF allowed them to share their expertise.

The PowerPoint presentation begins with an outline of the scope of the project (i.e., background information, evidence, literature, the gap in nursing, and social change).

### **Summary**

The gap in practice addressed in this project was the medical-surgical unit project site had a high readmission rate of CHF patients. I developed this project with the belief that increased education will help the nurses to educate their CHF patients better, thus resulting in fewer readmissions. The education plan was supported by evidence that aligned with the practice-focused question and the procedural steps. The project supports Walden University's mission of positive social changes by increasing nursing knowledge and improving their ability to teach patients. The improved patient education will allow CHF patients to manage their disease process better and positively enhance their quality of life.

### Section 3: Collection and Analysis of Evidence

#### **Introduction**

CHF, also known is a cardiovascular health problem associated with poor quality of life and adverse outcomes (Rossignol et al., 2019). Although medical-surgical nurses commonly care for patients with CHF, research has indicated that these nurses often lack understanding of the pharmacodynamics of diuretic therapy (Felker & Greene, 2021, para. 2). The project site, a medical-surgical/cardiac step-down unit of a hospital in the southeastern United States, identified that there was a high rate of CHF patient readmissions. It was believed that there was a gap in knowledge of the staff about the use of diuretics and fluid volume management that led to the ineffective education of their patients. Understanding how diuretics perform with CHF is crucial for nurses managing and educating their patients. The project promoted staff education and nursing knowledge related to diuretics, fluid restriction, and urine output of CHF veterans. I developed the practice-focused question to explore the importance of nursing staff education to increase nurses' knowledge of using diuretics, maintaining fluid restriction, and monitoring urine output for CHF self-management. Diuretic agents are the cornerstone medication for removing extracellular fluid volume central to the pathophysiology of CHF (Felker et al., 2020, para. 1).

Before the staff education session, I administered a pre-education survey to identify the staff's knowledge about CHF management topics, such as diuretics, fluid restriction, fluid balance of I & O's, and monitoring dry weight. The same questions were asked at the end of the education session as a post education survey. I then compared the

pre- and post-education survey scores to determine if there was an improvement in staff knowledge related to CHF management. Participants were asked to create unique identifiers, so their identities were kept confidential. Demographic data were collected to describe the participants. All data were kept confidential and stored on a password-protected computer accessible only to me and my preceptor.

### **Practice-Focused Question**

The practice-focused question that guided this project was: Does education of medical-surgical nurses increase their knowledge of CHF management? The staff education was supported by evidence from the literature that aligned with this practice-focused question and the procedural steps of the project. The project supports Walden University's mission of positive social change by increasing nursing knowledge and improving their ability to teach patients. The improved patient education will allow CHF patients to better manage their disease process and positively enhance their quality of life.

### **Sources of Evidence**

I accessed the sources of evidence (i.e., evidence-based research and scholarly peer-reviews and evidence from experts in their field) for this project through the Walden University Library. . The Google Scholar search engine; Joanna Briggs Institute Database of Systems; and CINAHL, PubMed, Sage Journal, and Science Direct databases were searched. The key search terms used were *congestive heart failure*, *nurses' knowledge*, *patient education*, *nursing education*, *self-care management*, *diuretics*, *fluid balance*, *fluid restriction*, and *dry weight*. All sources in the literature review were published within the last 5 years. By implementing this staff education



project, nursing knowledge will be improved and the nurses on the medical-surgical floor will be better prepared to educate their patients, leading to improved patient compliance with CHF management and better patient outcomes.

Mu et al. (2019) conducted a CHF fluid balance audit using the Joanna Briggs Institute Database of Systemic Review. Pre- and postimplementation audits determined improvement in the documentation of fluid balance monitoring of I & O's. They hypothesized that the incongruence may be due to an inaccurate knowledge deficit of intake and output documentation. Maintaining records of patients' fluid intake and output is vital to monitoring hydration status. The researchers concluded that an increased awareness of maintaining fluid balance I & O charting among nursing staff on the unit demonstrated how audits and focused education could have an immediate positive impact on clinical outcomes. By improving nursing knowledge about fluid balance (i.e., I & Os), the nurses on the medical-surgical floor at the project site will be able to provide better patient education on the importance of fluid balance monitoring and documentation.

Albert et al., (2002, as cited in Kuchenrither, 2021) evaluated the impact of a nurse-led education program on the patient self-management and hospital readmissions of CHF patients. The Nurses' Knowledge of Heart Failure Education Principles Survey was used to assess nurse's knowledge of HF self-management education with true or false surveys. The project outcomes supported previous findings that nurses caring for patients with HF may not have sufficient knowledge regarding essential HF self-management principles of care. By improving nursing knowledge about this topic, the nurses on the

medical-surgical floor at the project site will be able to provide better patient education about the essential HF self-management principles of care.

Krówczyńska and Jankowska-Polańska (2022) evaluated nurses' knowledge of patient education in general and topic-specific perceptions of basic information important for CHF self-care and the implementation of educational tasks in the care of CHF patients (para. 1). They performed a cross-sectional study in a public and university hospital setting with the use of a descriptive design and the Nurses' Knowledge of Heart Failure Education Principles Survey. The questionnaire consisted of "yes," "no," or "don't know" answers. They concluded that cardiology nurses' knowledge of CHF self-care principles regarding patient education was satisfactory but not with all mandatory issues. Nurses were not sufficiently prepared to provide patients with education on CHF self-care related to recognizing warning symptoms and deteriorations in health conditions and in the administration of medications. By improving nursing knowledge about this topic, the nurses on the medical-surgical floor at the project site will be able to provide better patient education about CHF, warning signs and symptoms, deteriorations in health conditions, and the administration of medications.

Chi et al. (2022) conducted a systematic review to identify "nurses' knowledge of heart failure self-care education according to the topics and factors that would be substantial to increase their knowledge" (para. 1). The Joanna Briggs Institute critical appraisal tool and a narrative approach were used to analyze the data. They concluded that critical care nurses' level of knowledge was unsatisfactory and that they needed more in-depth learning about and understanding of HF. The need for the current staff education

project was supported by these findings. The literature demonstrated how education could improve nursing knowledge about this topic (Albert et al., 2002, as cited in Kuchenrither, 2021).

### **Summary**

In this section, I will address supportive evidence-based research and scholarly peer-reviews and evidence from experts in their field. The sources of evidence research from using Walden University Database in this project. In Section 4, I will discuss the staff education project, implications for social change, and the project's limitations.

## Section 4: Findings and Recommendations

### **Introduction**

I designed this staff education project to determine if providing nurses in a medical-surgical step-down unit of a hospital in the southeastern United States improved their knowledge of CHF after attending an education session. Unfortunately, the site where the education session was to be presented could not support the project through completion. Consequently, I received approval from Walden University faculty to locate a new project site. The education session ended up being delivered to nurses at a skilled nursing facility in the southwestern United States with approximately 125 residents, and many of whom have CHF as one of their diagnoses. The staff in the skilled nursing facility are mostly licensed practical nurses (LPNs). The managers and directors are RNs who supervise the LPNs and provide patient care as needed. While they are not medical-surgical nurses, they do care for patients with CHF, so the content was applicable to their practice. The managers and directors were the participants of the staff education. I used pre- and post-education surveys to collect data to determine if there was an improvement in the nurses' knowledge after attending the education session. The practice-focused problem for this staff education project was: Does education of medical-surgical nurses increase their knowledge of CHF management?

. The pre-education survey was presented with a yellow border, and a unique identifier (i.e., the last letter of the first name, the second letter of the last name, and the month of birth) was used to protect the participants' privacy. The survey included 15 questions along with other questions used to collect demographic data. I provided the

participants with an evidence-based PowerPoint presentation related to CHF. After the education session, a post education survey with a blue border with the same 15 questions and unique identifier was administered to all participants. The data were stored securely in a university-designated folder only accessible to me.

The purpose of the study was to evaluate nurses' knowledge about CHF management, promote CHF patient teaching for self-care and to aid in identifying adverse reactions or flare-ups, and the pharmacodynamics of diuretic therapy. Nine RNs participated in the education session, including three males (33.3%) and six females (66.7%). Broken down by age group, the population consisted of two participants between the ages of 20–25, one between the ages of 26–35, two between the ages of 36–45, three between the ages of 46–55, and one that was age 56 or greater. The scores from the pre-education survey were  $M = 2.33$ ,  $Mdn = 2.00$ , and the scores from the post education survey were  $M = 2.33$ ,  $Mdn = 2.00$ . These findings indicate that the RNs did not have any improvement in knowledge after attending the staffing education. While reviewing unique identifiers, I observed that the nine participants provided the same answers in both pre- and post-education surveys. I spoke with the director of nursing at the project site and shared these findings.

### **Recommendation**

I was surprised to find that there was not any improvement in knowledge between the pre- and post-education surveys. I recommend that the project site consider implementing practice guidelines for the nurses to use for discharge education. Pellegrino and Breda (2022) presented a concept of the green, yellow, and red zones that can be

used to identify which CHF patients are at higher risk of flare-ups. This would create a new infrastructure for how the project site cares for their CHF residents. Pamphlets, posters, and binders can be made with examples of diet, fluid restriction, and references that can be used by the RNs and LPNs as a written resource to enhance their patient teaching. According to Seo-Jin and Bo-Hawn (2022), HF patients should be systematically educated before discharge on how to self-manage their care with standard written materials.

The RNs could benefit from having more specific data from their site about CHF patient readmissions to pique their interest and fuel their desire to improve their knowledge and patient teaching. On admission, it would be helpful if CHF patients could be identified in the record with a universal identifier to allow staff to quickly identify whether they are CHF residents. The RNs can teach LPNs how to identify adverse signs and symptoms while providing education about weight management, diet, medication, and light exercise to prevent readmissions and better manage the CHF population in-house. This way, nurses could increase their own knowledge about CHF while improving the education they provide patients about the disease, management, and self-care.

### **Contributions of the Doctoral Project Team**

The project team should have consisted of the CHF medical director, the nursing academic affiliation coordinator, the nurse manager, the assistant nurse manager, CHF dietitians, and a RN because this was the planned team at the original project site. After completing two clinicals at the project site, I was informed by my site preceptor that the site did not have an affiliation agreement on record for DNP students, and they were

unable to continue supporting my academic advancement. I lost my project site and my expert team panel. I ended up developing the pre- and post-education surveys, and my committee chair, Dr. Rouse, became the expert who reviewed my education session content and surveys. The staff education project steps were followed as required by Walden University. Due to the barriers and constraints, Dr. Rouse worked with leadership at Walden University, and I was instructed to find a new project site and present the educational content as planned. I was fortunate to locate a nursing home willing to allow me to complete the project there. The nurse manager of the Cardiac Catheterization Laboratory at the original site assisted me by providing benchmark information and a list of resources related to CHF. The program director of simulation, the developer of CHF unit, and a nurse practitioner helped me find a new project site; however, they were unable to be on the project team because of the organization's policies and procedures. Being the leader and DNP student of my project, I created an evidence-based PowerPoint presentation and the pre- and post-education surveys and made modifications after receiving feedback from my committee chair.

I would like to extend this work beyond this DNP project. After the time I invested, I would like to use this educational content as a teaching tool for CHF patients. I plan to apply for a grant to teach and monitor shut-in patients that are diagnosed with CHF. I would also like to combine my findings with others who are doing similar projects related to CHF.

### **Strengths and Limitations of the Project**

The strength of this staff education project is that it is about something I am passionate about. Prior to my DNP journey, I worked with HF patients for several years and became a HF champion. I collected data for the Minnesota Heart Failure questionnaire for a global project regarding CHF. I also became a member of CHF Shared Governance and volunteered to work in the clinic weekly to assist in educating CHF patients on how to use telehealth and promote CHF telehealth education. My goal when the project started was the promotion of knowledge for staff to help them with educating patients. This was applicable to the initial project site and would have improved nursing knowledge to improve the quality of life for CHF patients.

Unfortunately, there were many limitations in completing this staff education project. The first was losing the original project site. I received permission from Walden University leadership to find another project site, and a second site was obtained but then later declined to take part in the project. Ultimately, the project was completed in a nursing home. While I was grateful to have a site to complete the project, I was disappointed that it was not on a medical unit that treats CHF patients.

Another limitation was that the topic was not as relevant for the group of nurses that ended up participated in the educational session. The original gap in practice was identified in another setting. A nursing home focuses on the continued care of the geriatric population and not directly on the health disparities of one disease, such as CHF (Boxer et al., 2022). I presented the staff education session during monthly meeting at the skilled nursing facility consisting of managers and directors of nursing. LPNs were



excluded. The director of nursing explained that LPNs were needed to administer medications and would not be able to attend the education session.

Another limitation related to finding a new site was that the RNs in the nursing home that attended the education session were polite in listening and completing questionnaires; however, it was difficult to get them engaged. I was not surprised to see that their scores of the poste-education survey were the same as the scores from their pre-education survey. They were quiet during the presentation even when I tried to engage them in dialogue. RNs undertake complex management tasks at the nursing home, including leading nursing care teams; supervising no nursing staff; allocating workloads according to residents' care needs, staff skills, and experience (see Hendricks et al., 2018). The participants were not the ideal group to receive this education, and as a result, I expect that this project will not have the positive social change impact that I had hoped for.

## Section 5: Dissemination Plan

I presented the staff education project in a monthly meeting of RNs, which consisted of nursing managers and directors that visit sister nursing homes. This project content can be used as a teaching tool and can be disseminated throughout the organization. I intend to utilize the contents of this project to create a YouTube channel to promote CHF. This channel will be available publicly for anyone looking for information about CHF. In addition, the content can be shared at professional nursing organization meetings and conferences. My experience during this DNP project can also be shared because I believe it is important to disseminate lessons learned.

### **Analysis of Self**

When analyzing myself as a practitioner, scholar, and project manager, this project challenged every facet of my being. I cultivated internal strength to become an architect and a leader to manifest concepts at the DNP level of nursing. The practitioner in me wanted to nurture and care for others. The scholar wanted to digest as much information as possible to help others. The project manager learned to never give up. Things may not go right in the beginning, but just put one foot in front of the other and keep moving. I learned that when you believe in yourself, your goals can be met. In addition, another challenge of this journey was getting someone to support my project idea. I am passionate about CHF but realized it was not easy to find a clinical site willing to allow a DNP student to complete their project there. It was challenging to find a site that was enthusiastic about CHF education. I learned that it is crucial to not lock yourself into one concept. That statement reminds me of the saying to “not put all your eggs in

one basket.” It is better to take an idea, apply it, and learn how to make it better, so it can be used in multiple ways for different areas in a profession. The American Association of Colleges of Nursing (2019) stated that the DNP project should serve as a “foundation for future scholarly practice” through a “practice immersion experience” (p. 21). Now, I feel accomplished, and I thank GOD for being my copilot on my journey to DNP completion.

### **Summary**

In conclusion, CHF is a health disparity that affects millions of Americans (National Healthcare Quality and Disparities Report, 2022). This health disparity started as a rich White man’s disease and has been around for centuries (Islam,2018). I conducted this project to answer the following question: Does education of CHF in medical-surgical nurses increase their knowledge of CHF management? While this project did not show an improvement in education, I learned lessons that will guide my future work related to this important topic.

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## Appendix A: Improving Medical-Surgical Nursing Knowledge of Congestive Heart

### Failure and Management



# Improving Medical-surgical Nursing Knowledge of Congestive Heart Failure Management

Power-point presentation by: Sylvia Cunningham, DNPs, MSN, RN

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#### Improving Medical-surgical Nursing Knowledge of Congestive

#### Heart Failure Management: History of CHF

- In 1948, the *Framingham Heart Study* published, and described the epidemiology of Congestive Heart Failure (CHF) as a weak organ with the propulsion of blood at a slower rate, did not meet the demands of the body's system (Andersson, et al., 2019).



## Improving Medical-surgical Nursing Knowledge of Congestive Heart Failure Management

In the 21<sup>st</sup> century Cardiovascular Disease continues to be a risk factor in the U.S. population since the investigation of the Framingham study.

- **Congestive Heart Failure (CHF)** is also known as *Heart Failure (HF)*
- Although nurses commonly care for patients with CHF.
- CHF has highest number of hospitalization & readmission rate (Goldgrab et al., 2018)

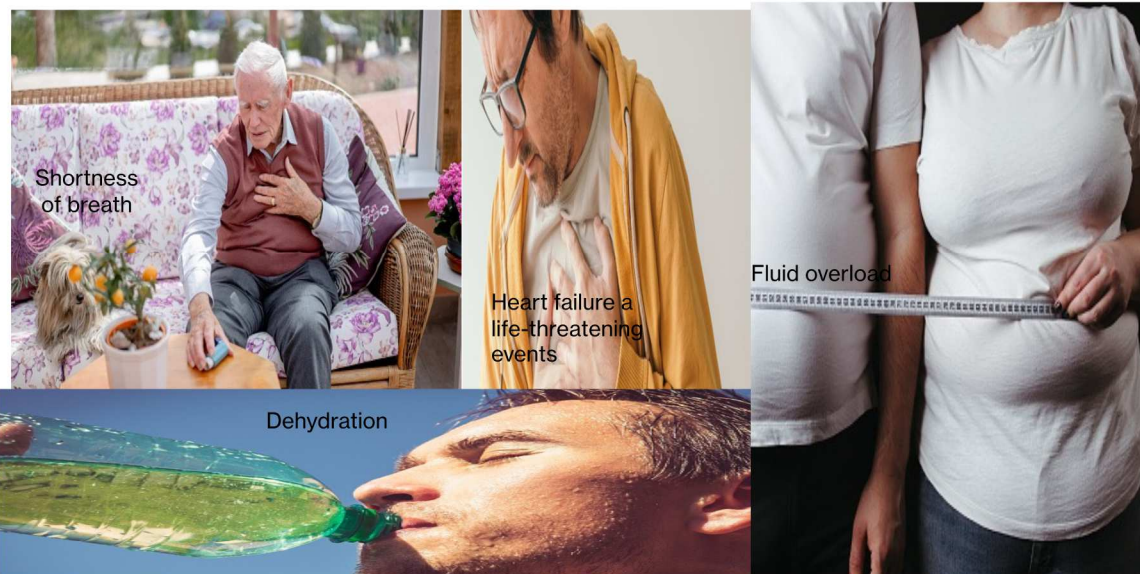


## PROJECT QUESTION(S)

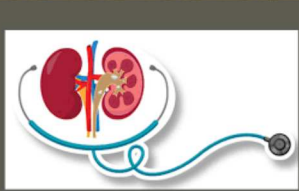
Does education of medical-surgical nurses increase their knowledge of CHF management?"



**Improving Medical-surgical Nursing Knowledge of Congestive Heart Failure Management: Warning signs of CHF flare-up that can result in life-threatening events**



**Improving Medical-Surgical Nursing Knowledge of Congestive Heart Failure..**



• **Edema (swelling)** occurs when less blood to your kidneys causes fluid and water retention.

• Ankles



• Legs

• Abdomen

• Weight gain

• Fatigue



**Respiratory problems during CHF flareups can create:**

• Productive /Unproductive Cough



• Sleep in a recliner



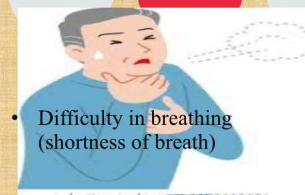
• Sleep with several pillows under the head to keep the body flat



• Difficulty in breathing call



**Life-threatening**



• Difficulty in breathing (shortness of breath)



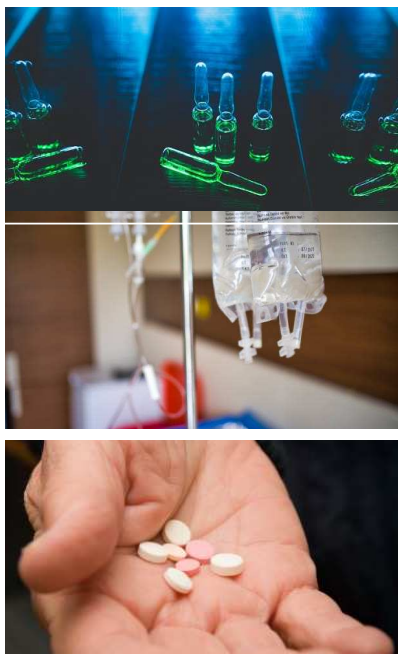
**Cardinal symptoms of CHF**

- Cough
- Tachycardia
- Venous congestion (edema)
- Low cardiac output
- fatigue

Chest pains/  
Difficulty in breathing (Call 911)

Call your nurse-practitioner in CHF clinic





**Improving Medical-surgical Nursing Knowledge of Congestive Heart Failure Management**

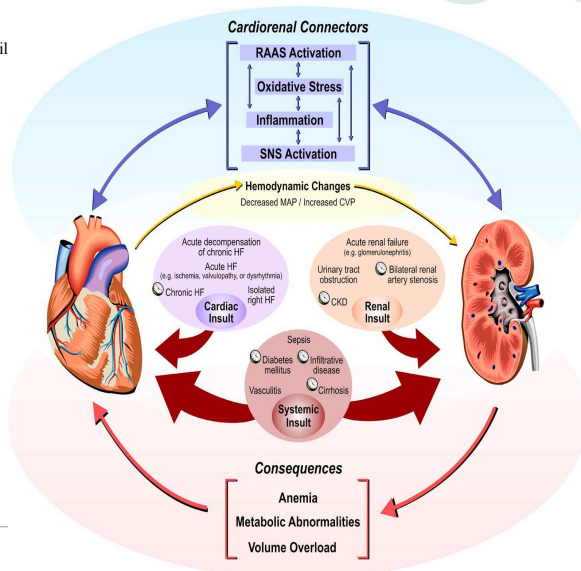
- Diuretics are the first line of defensive for CHF patients suffering with fluid overload.

**Improving Medical-surgical Nursing Knowledge of Congestive Heart Failure Management: Diuretics**

The most common types of diuretics used to treat Congestive Heart Fail

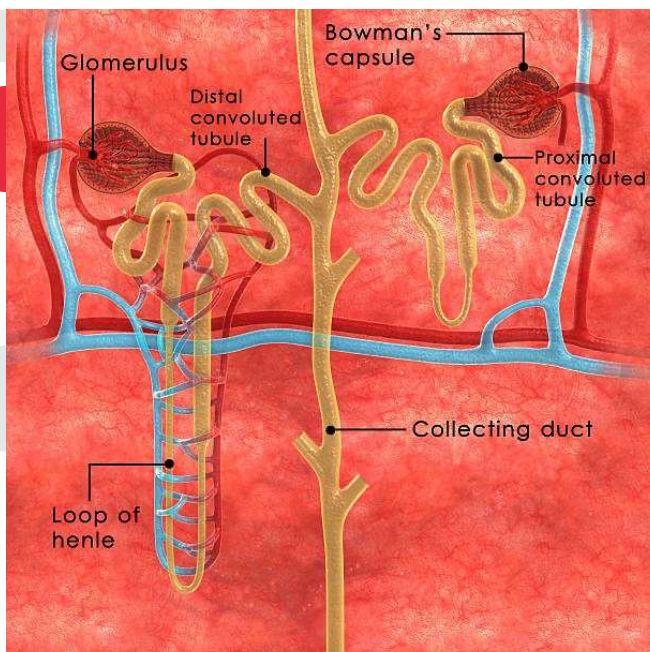
- Loop diuretics*
- Potassium-sparing*
- Aquaretic*

- According to Kennelly, (2021) fluid overload is a major pathological mechanism leading to vascular congestion, pulmonary congestion and elevated jugular venous pressures.



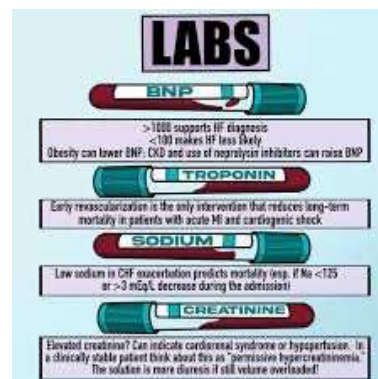
Improving Medical-surgical Nursing Knowledge of Congestive Heart Failure Management: Diuretics groups

- Loop Diuretics
- Potassium Sparing
- Osmotic Agents



Improving Medical-surgical Nursing Knowledge of Congestive Heart Failure Management: Labs

- Brain natriuretic peptide (BNP)
- Troponin
- Sodium (Na)
- Creatinine
- Blood Urea Nitrogen (BUN).
- Creatinine & BUN (eGFR)



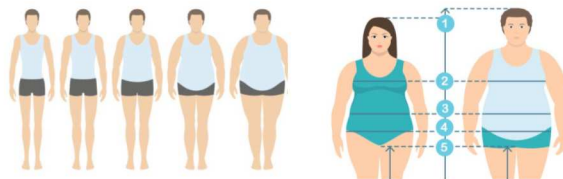
### Improving Medical-surgical Nursing Knowledge of Congestive Heart Failure Management

- Medical–surgical nurses can improve their knowledge of Congestive Heart Failure.
- Managing Flare-ups



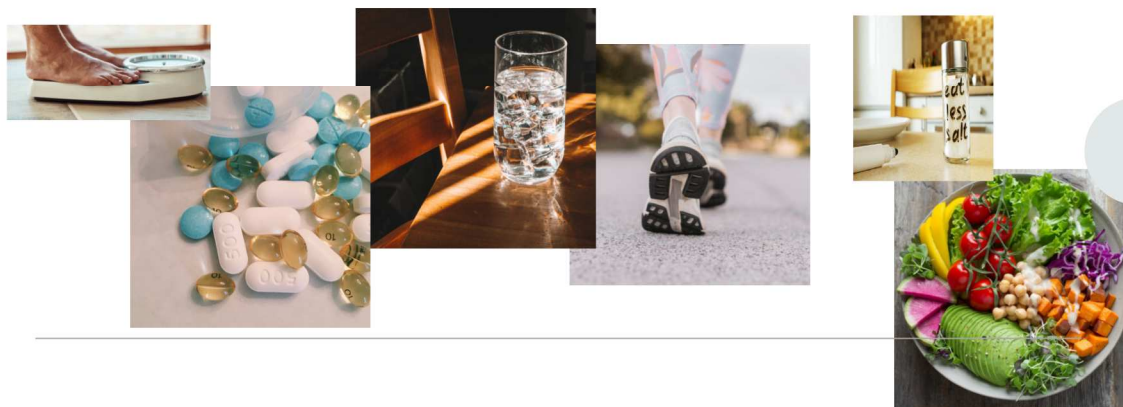
### Improving Medical-surgical Nursing Knowledge of Congestive Heart Failure Management CHF: Nurses' teaching patient to manage CHF to prevent flare-ups

- **Every morning** take a standing weight.
- What is a **dry weight**
- **Keep a journey**



**Improving Medical-surgical Nursing Knowledge of Congestive Heart Failure Management : Daily lifestyle modification**

- Medication
- sleep
- Monitor your dry weight
- Daily exercise(e.g., walking, ride bicycle, yoga, chair exercise)
- Comply to diet restriction and fluid restriction
- Limit salt intake
- Recognize adverse symptoms of CHF



**Improving Medical-surgical Nursing Knowledge of Congestive Heart Failure Management CHF: Nurses' teaching patient to manage CHF to prevent flare-ups and measuring fluid intake**

- **IF:** you drink too many fluids, you may get symptoms such as swelling, weight gain, and shortness of breath.
- **IF:** Increase in weight 2-lbs, call your Nurse Practitioner (CALL TODAY)
- **IF:** Not passing urine or have a low urine output (CALL MD, TODAY)
- **IF:** life-threatening symptoms calling 911
- **IF:** Following daily lifestyle modification and still having flare-up , speak with your MD, NP, and CHF dietitian, for ethnical tailor treatment



**Monitoring Water Weight**

• Weigh yourself **every day** using the same scale.

• Weigh yourself at the **same time** every morning.

• Use the **washroom** and **eat salt** before weighing yourself.

• Please **daily log** all your weight.

DATE	MOON	FAHRS	WEED	WEAIND	FEW	WEAT
10/10	100	100	100	100	100	100
10/11	100	100	100	100	100	100



### Improving Medical-surgical Nursing Knowledge of Congestive Heart Failure Management: Fluid Restriction:

Fluids are foods that are liquid at room temperature.

Alcohol is also considered as fluid, please consult dietician

Ask yourself, "Am I really thirsty"

Sucking on hard candy or chewing gum



### Improving Medical-surgical Nursing Knowledge of Congestive Heart Failure Management CHF: Outcome

- CHF management, leads to positive social changes
- Nurses are better equipped to educate their patients.
- Patients can improve their quality of life.



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## Appendix B: Pre-education Survey

Pre-education Survey: Improving Medical-Surgical Nursing Knowledge of Congestive  
Heart Failure Management**Unique Identifier**

Last letter of your first name: \_\_\_\_\_

Second letter of your last name: \_\_\_\_\_

The month of your birth (01-12): \_\_\_\_\_

Example: Au07

## Demographic information:

Age:

 20-25 years old 26-35 36-45 46-55 > 56

Gender:

 Male Female Other

Ethnicity

 White Black Asian American Indian/Alaska native Native Hawaiian/Pacific Islander Mixed ethnicity

Number of years as a Registered Nurse

 0-5 6-10 11-15 16-20

() >21

1. What is the most common cardiovascular health problem associated with poor quality of life and adverse outcomes?

- A. Congestive Heart Failure
- B. Asthma
- C. Inflammatory Bowel Disease
- D. Benign Prostatic Hypertrophy

2. What is another name for Congestive Heart Failure (CHF)?

- A. Renal Calculi
- B. Systemic Lupus Erythematosus
- C. Rheumatoid Arthritis
- D. Heart Failure

3. The patient is admitted to the hospital with signs and symptoms of shortness of breath, weight gain, pitting edema, and a cough. The doctor orders several medications, what is the first line of medication that should be administered to the patient?

- A. Kayexalate
- B. Diuretic
- C. Lopressor
- D. Digoxin

4. What are the most used types of diuretics?

- A. Aspirin, Vorapaxar, Abciximab, Tirofiban
- B. Loop, Potassium-sparing, Osmotic diuretics
- C. Streptokinase, Alteplase, Reteplase, Tenecteplase
- D. Verapamil, Diltiazem, Digitalis, Adenosine

5. To decrease 30-day readmission of CHF patients, it's important for nurses to promote self-care measures prior to discharge by teaching patients about?

- A. Weighing themselves in the morning before breakfast, and writing down the weight
- B. Taking medications as prescribed
- C. Signs and symptoms of flare-ups
- D. Eating food low in salt, balancing activities, and rest periods
- E. All the above

6. What is considered a dry weight?

- A. Normal weight when you do not have extra fluid in your body



- B. A weight taken after waking up, after urination (voiding) and without any clothes on.
  - C. Wearing heavy clothing each time you weigh yourself and taking your weight in the afternoon.
  - D. Estimating your weight without getting on a scale and writing it in a journal.
7. Which enzyme only occurs in the heart muscles cells and enters your blood when the heart muscle is damaged?
- A. Ammonia
  - B. Troponin
  - C. BNP
  - D. Blood pressure
8. What laboratory test is used to assess how hard the heart is working to keep the blood pumping through the body and to determine if the heart is pumping adequately.
- A. B-type natriuretic peptide (BNP)
  - B. Sodium level
  - C. Creatinine level
  - D. Blood Urea Nitrogen (BUN)
9. The measurement of Creatinine & BUN can be used to determine what rate?
- A. Glomerular filtration rate (eGFR)
  - B. Sodium level
  - C. Potassium level
  - d. N-terminal (NT)-pro hormone BNP level
10. CHF is a lifestyle, and everyday it's important to:
- A. Monitor your daily dry weight
  - B. Maintain fluid restriction (e.g., 1500ml- 2000ml) as prescribed by the doctor
  - C. Daily exercise (e.g., walking, riding a bicycle, yoga, chair exercise)
  - D. All above
11. Fluids are all foods and drinks that are liquid at room temperature. All drinks, Jell-O, ice cream, sherbet, popsicles, water ice, ice cubes, soup, custard, pudding, sauces, and gravies count as fluids. Why should CHF patient's fluids be limited each day?
- A. To prevent shortness of breath
  - B. To prevent swelling in hands and feet
  - C. Homeostasis of fluid intake/out
  - D. It acts as a diuretic (water pill)
  - E. All above
12. How can the nurse teach the CHF population about fluid restriction/fluid intake limitation (e.g., 1500ml, 1800, 2000) (check all that apply).

- A. The nurse can reference using a 2-liter soda container which equals 8 cups or 64 ounces of fluid for a total of 1920ml
  - B. The nurse should consult the CHF dietitian, to tailor a diet and fluid intake ordered by the MD.
  - C. The CHF patient should be allowed to drink as much fluid as he/she can drink.
  - D. Instruct CHF patient anytime they feel thirsty to use hard candy or frozen grapes.
13. When less blood to the kidneys causes fluid and water retention, what areas of the body would edema (swelling) be noticed?
- A. Ankles & legs
  - B. Abdomen
  - C. Overall weight gain
  - D. All the above
14. When CHF flares-up what respiratory signs & symptoms should clients watch for?
- A. Cough (productive/nonproductive)
  - B. The need to sit in an upright position or recliner to breathe easier
  - C. Needing to sleep with several pillows under their head because they are unable to lay flat.
  - D. Difficulty in breathing
  - E. All of the above
15. What are life-threatening signs & symptoms of CHF, that would indicate calling 911 for emergency (check all that apply)?
- A. Heart palpations
  - B. Difficulty in breathing or shortness of breath
  - C. Chest pains
  - D. Fatigue

## Appendix C: Post-education Survey

Post-education Survey: Improving Medical-Surgical Nursing Knowledge of Congestive  
Heart Failure Management**Unique Identifier**

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The month of your birth (01-12): \_\_\_\_\_

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4. What are the most used types of diuretics?
  - A. Aspirin, Vorapaxar, Abciximab, Tirofiban
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  - D. Eating food low in salt, balancing activities, and rest periods
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- D. Difficulty in breathing
- E. All of the above

15. What are life-threatening signs & symptoms of CHF, that would indicate calling 911 for emergency (check all that apply)?

- A. Heart palpitations
- B. Difficulty in breathing or shortness of breath
- C. Chest pains
- D. Fatigue