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Teach-back Education in Heart Failure Patients Benchmark Study

Bethany N. Johnson
University of Texas at Tyler, bnjohnson928@gmail.com

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Bethany Johnson

University of Texas at Tyler

In Patrial Fulfillment of

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Dr. Colleen Marzilli

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Contents

Executive Summary

Heart failure exasperation is one of the most common causes of hospital readmission in the United States (Breathett et al., 2018). It is estimated that greater than half of all heart failure patients will be readmitted to the hospital within six months of discharge (Caluya, 2021). Additionally, one in four individuals with heart failure are readmitted within thirty days of discharge (Rahmani et al., 2020). This data shows a large area of improvement for hospitals in order to improve patient outcomes. Due to the lack of standardized discharge teaching, heart failure patients are often admitted to the hospital for the same reoccurring symptoms (Haney & Shepherd, 2018). Since the patients are frequently hospitalized, they report a decreased quality of life (Rahmani et al., 2020).

The implementation plan will involve a nurse rounding every day to conduct heart failure education using the teach-back method to heart failure patients and their families. This nurse will be educated on heart failure and common questions the families might have. Through implementing this change, the rates of readmission in heart failure patients will be decreased as well as improving health literacy in this patient population (Rahmani et al., 2020).

Heart failure imposes high costs on society and is typically 50-79% more expensive to treat compared to other illnesses (Rahmani et al., 2020). This large amount can great medical debt for patients that they are unable to pay back. The research identified that the teach-back education method decreases readmission rates, improves patient experiences, and increases medication compliance. The following study will be based on the PICOT question: In patients with heart failure (P), how does the use of teach-back education method (I) compared to typical discharge education without teach-back (C) affect the rate of hospital readmission (O) within the first 30 days of discharge (T)?

Teach-back Education in Heart Failure Patients Benchmark Study

1. Rationale for the Project

At St David's Medical Center, heart failure is the leading cause of readmission compared to other diagnoses (Dexur, n.d.). One of the most important elements in preventing unnecessary hospital readmissions is through education (Breathett et al., 2018; Almkuist, 2017). Through using the teach-back method, patients are involved in the education process and are able to retain much more of the information being taught (Haney & Shepherd, 2018).

It is often difficult for these individuals to function independently due to the complex medication regimen that they require or the inability to control their symptoms. These patients express difficulty balancing self-care and managing symptoms during heart failure exasperations (Rahmani et al., 2020). One of the most noticeable symptoms of heart failure exasperation is shortness of breath, which can easily affect all aspects of an individual's life (Iqbal et al., 2019). Activities for daily living can become increasingly more difficult due to the shortness of breath and fatigue (Rahmani et al., 2020). Due to the inability to complete tasks, individuals lack independence and report decreased quality of life (Almkuist, 2017).

When a floor nurse has a heart failure patient, they will get into contact with the heart failure educator and plan a time that the patient can meet for education. Additionally, if the nurse has any concerns or questions from the patient, they can reach out to the educator to prevent the spread of misinformation. Another helpful step would involve holding an in-service for floor nurses to educate them on heart failure treatment plans. By educating the nursing staff on the clinical issue and equipping them with proper teaching techniques, patients will benefit from increased knowledge (Breathett et al., 2018). This allows the nurse to be aware of the care plan and possibly anticipate the needs of the patient. This also an opportunity for the staff to voice any

questions concerning the new change. By increasing communication, the chance for any pushback is minimized.

Upon readmission, the patients often report a lack of knowledge concerning their diagnosis and medications, leading to noncompliance with treatment (Breathett et al., 2018). Providing patients with the knowledge to better care for themselves, allows the patient to feel independent in their health (Rahmani et al., 2020). Unfortunately, there is no standardized way of providing heart failure education, which often causes confusion among patients (Caluya, 2021). Education in the hospital setting is primarily the nurses' responsibility (Rahmani et al., 2020). Due to their busy schedules, it is often difficult to complete any extensive education. The heart failure nurse educator's only duty will be focused on educating the patient so they will have time to identify the specific needs of the patients.

1.1 Project Goals

The primary project goal includes reducing heart failure readmission rates by 30% in the first six months of implementing the project. A secondary goal of the project is patients reporting increased satisfaction with their hospital stay. This will be accomplished through gaining a personal relationship between the staff and patient, as well as creating a deeper level of trust. By the end of this project's implementation period, patients will report an increase of knowledge by 75%. This will be evaluated through patient surveys that will be handed out to heart failure patients upon discharge.

1.2 Facility

This change will be implemented at St. David's Medical Center in Austin, Texas. Not only is this hospital the primary cardiac facility in the Austin area, but is considered one of the best in the nation. At St. David's Medical Center, heart failure is the leading causes of

readmission compared to other diagnoses (Dexur, n.d.). In order to build the case for change, it is important to be aware of the readmission rates and percentage of heart failure patients that the facility serves.

2. Literature Discussion to Support Project

Research shows that readmission rates were decreased and patients reported positive experiences when using the teach-back method (Breathett et al., 2018; Patel et al., 2020). Consistent teaching through the heart failure nurse educator will improve health outcomes and aid nurses in providing the highest quality of care (Rahmani et al., 2020; Patel et al., 2020). By equipping the patients with knowledge concerning their diagnosis and care plan, hospital readmission rates will be decreased, and patients experience an improved quality of life (Mesbahi et al., 2020).

How the patient and family members perceive the intervention is one of the most important parts of implementing the change. Incorporating the teach-back method involves very little risk for the patient but greatly improves their experience and overall quality of life. The patient and family will have increased knowledge about heart failure and the steps to take to manage their condition while at home. A helpful aspect of using the teach-back method is that it develops a personal connection between the staff and the patient (Patel et al., 2020). One of the drawbacks in patient experience will be the increased time spent learning. The teach-back method is a process and requires both the learner and the educator to be willing to spend time on the teaching. This may seem tedious to the patient if they are not completely willing to learn. The use of teach-back education has been proven to be a low-cost strategy in reducing the rate of hospital readmission (Canon-Montanez et al., 2021). Through implementing this change, the

rates of readmission in heart failure patients will be decreased as well as improving health literacy in this patient population (Rahmani et al., 2020).

3. Project Stakeholders

One of the main stakeholders in the implementation of this change is hospital management. Having an extra staff member present to act as the heart failure nurse educator would have to be approved by the hospital staffing board. Extra resources would have to be allocated to provide the education for the staff members. Additional stakeholders in this project are the patients. The change directly impacts the care that they receive. Surveys will be conduct upon discharge to ensure a positive experience. Their opinions would be used to adapt the project to meet their needs more specifically.

4. Proposed Outcomes

Through implementation of this change, the rates of readmission in heart failure patients will be decreased (Rahmani et al., 2020). Patients with heart failure would experience improved health literacy and be able to care for themselves more independently. Additionally, patients would have increased patient satisfaction due to the deeper level of trust that is established in the individual teaching sessions. Lastly, through the implementation, the patients would have better health outcomes resulting in an improved quality of life (Patel et al., 2020).

5. Evaluation Design

In order to evaluate the effectiveness of this intervention, patients will be sent a survey upon discharge to understand their knowledge level and confidence in self-care. The survey will also address areas where the patients feel the education was lacking in order to help future patients. Readmission rates for heart failures diagnoses will be tracked and compared to the data

pre-intervention. Additionally, hospital readmission rates will be tracked over the course of the year. The numbers will be compared to the following year to show if the change was effective.

6. Implementation plan

In the first phase of the change, the main team leader will pick a set of nurses to be on a team of leaders and a group of nurses to be the heart failure educators. This step will take an approximate four weeks. The next four weeks will be spent training the heart failure nurse to the different floors and building relationships with the staff. Time will also be spent on ensuring the staff are competent with the electronic health record (EHR). Both the heart failure nurse and the staff nurses will attend in-services to gain wisdom and be able to communicate any concerns about the new process. This is to prevent the spread of misinformation and ensure the patient receives up to date information about their diagnosis. The last four months of the implementation process will be spent on the trial basis where any obstacles will be resolved. The educator will work with a small group of patients in order to sort out any conflicts that may arise in the early phase. Once this phase is complete, the heart failure educator will then work with all units and manage any heart failure patient education and discharge. Through all phases, communication will be stressed, and any concerns will be dealt with immediately. The total amount of time for the implementation of this change will be approximately six months.

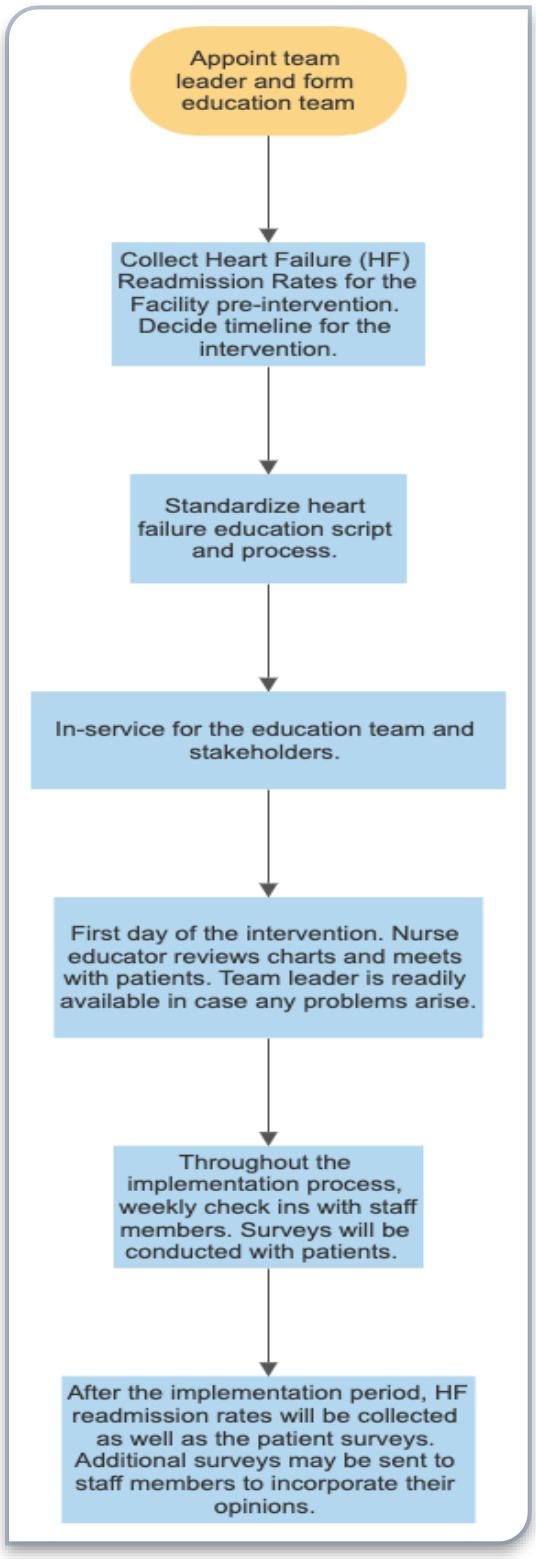
7. Timetable/Flowchart

The following timetable serves as a guide for the implementation process. This timetable can be used in different facilities and adjusted to the specific needs of the team. The attached flowchart is also a useful resource to give to the team to ensure that everyone is aware of the expectation and timeline of the project.

Step 1: Appointing the team leader and forming the education team. In this step, the team will be formed and a leader will be chosen, who will be in charge of implementing the intervention. The leader will be the one who answers questions and will resolve any conflict. They will also be in charge of following the implementation process and monitoring the readmission rates.

Step 2: Collecting the heart failure readmission rate data. The team will collect the information on the heart failure readmission rates in the facility as well any information on heart failure patients who are admitted during this period.

Step 3: Standardize heart failure education. In this step, the team will decide on the information being provided to the patients and form a script to base the educational sessions on. Paper pamphlets may also be helpful for patients to refer to after the sessions has ended.



Step 4: Holding an in-service to ensure every member understands the expectations and timeline of the implementation process. Everyone will be taught on the heart failure disease process, common medications, easy lifestyle changes, and possible interventions. This will be a time of learning for the team as well as teaching how to use the educator script. Even those not in the educator role will be taught the information in order to be a resource to the nurse educators. It is important that everyone involved in the intervention is familiar with the information and the implementation process. The in-service will also discuss the timeline and expectations for each team member. There will be time allotted to answer any questions and encourage staff in this process. Stakeholder can be involved to voice their knowledge and opinions on the intervention.

Step 5: The first day of implementation. The nurse educator assigned to work that day will arrive and review charts to find any heart failure patients that are in need of education. In the beginning stages, the intervention will focus on heart failure patients that are admitted due to poor compliance of their health regimen. Eventually, all heart failure patients, regardless of their admitting diagnosis, will see the nurse educator at some point during their stay to gauge their knowledge and compliance. The nurse educator will identify these individuals and reach out to their primary nurse to coordinate a time to meet with the patient. Throughout the day, the nurse educator will use the provided script to base the educational sessions on. During the first day of the intervention, the team leader will be readily available as a resource for the nurse educator.

Step 6: Weekly check in with the educators. Each week, the team leader will check in with the group and identify any areas for improvement. This time will also be used to answer any questions, clarify expectations or information, or conflict resolution. During this time, the team leader will round on patients and conduct surveys to help incorporate patient preferences.

Step 7: Once the implementation period is complete, the team will gather post-implementation heart failure readmission rates as well as gathering all patient survey information. They will then compare their findings to the pre-intervention readmission rates.

Step 8: After the designated implementation period, the team will meet again to share the readmission rates and patient preferences. The study's stakeholders will also be asked to attend the meeting in order to see the results of the study. Time will be designated to hear the thoughts from the teams and any suggestions they have for changes. After these findings are shared, the team can decide if this intervention was successful in lowering the heart failure education rates in the facility.

8. Data Collection Methods

Outcomes will be measured through patient satisfaction surveys, tracking the heart failure readmission rates, staff satisfaction surveys, and patient stated knowledge levels. Surveys will be sent out after discharging and collected throughout the intervention. The surveys will include rating the different components of the intervention between one-five. The patients will rate in interactions they had with staff members, how useful they found the information, the timeliness of the meetings, and how relatable they found the education. They will also rate what they believe their knowledge level was before the intervention and what they believe it is now. There will also be a free space for the individuals to express any concerns or areas for improvement. Data will be compared to previous data from before the implementation of the project. The team leader will organize the data and present to stakeholders and hospital administrators throughout the implementation period.

9. Discussion of Evaluation

The intervention will be evaluated based on the heart failure readmission rates, patient satisfaction, and increased patient knowledge. Before the intervention, the team will research the current heart failure admission and readmission rates for the facility. They will also compile a list of common chief complaints when the patients are readmitted. It is estimated that around half of all heart failure patients will be readmitted to the hospital within six months of discharge for the same reoccurring chief complaints (Caluya, 2021).

The next evaluations will be based on the patients and their experience. Patient surveys will be sent out after discharge to understand the patient experience. Prior to implementation, the team will design a survey template to send patients that addresses their opinions of the heart failure nurse as well as their perspective of their knowledge. The goal for the patient satisfaction is greater than 80% overall satisfaction of the program. For the patient knowledge, the goal will be patients reporting greater than 75% increased knowledge on heart failure.

10. Costs/Benefits

This project does not require extensive funding in order to work. The use of teach-back education has been proven to be a low-cost strategy in reducing the rate of hospital readmission (Canon-Montanez et al., 2021). A helpful aspect of using the teach-back method is that it develops a personal connection between the staff and the patient (Patel et al., 2020). One of the only drawbacks from the intervention will be the increased time spent learning. The teach-back method is a process and requires both the learner and the educator to be willing to spend time on the teaching. This may seem tedious to the patient if they are not completely willing to learn. Through implementing this change, the rates of readmission in heart failure patients will be decreased as well as improving health literacy in this patient population (Rahmani et al., 2020).

Conclusions/Recommendations

One of the main causes for hospital readmission in the acute setting is heart failure exasperation (Breathett et al., 2018). The most successful solution to decrease the hospital readmission rate is through the implementation of teach-back education. The literature shows that readmission rates were decreased and patients reported positive experiences when the teach-back method was used during their hospital stay (Breathett et al., 2018; Patel et al., 2020). Through implementing this change, the rates of readmission in heart failure patients will be decreased as well as improving health literacy in this patient population (Rahmani et al., 2020). Increased health literacy is one of the most valuable tools in improving patient outcomes due to providing them the ability to care for themselves. Through the use of consistent teaching, health outcomes will improve and nurses will be able to provide the highest quality of care.

The use of a heart failure nurse should be adapted in any facility that deals with a majority of cardiac patients. All heart failure patients deserve to have proper education concerning their diagnosis. Teaching them throughout their care can also help minimize hospital visits. Although this project was based in the acute setting, this change can be adapted in any facility that deals with heart failure patients. By equipping the patients with knowledge concerning their diagnosis and care plan, hospital readmission rates will be decreased, and patients will have an improved quality of life.

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Citation: (i.e., author(s), date of publication, & title)	**Conceptual Framework**	**Design / Method**	**Sample/ Setting**	**Major Variables Studied and Their Definitions**	**Measurement of Major Variables**	**Data Analysis**	**Study Findings**	**Strength of the Evidence (i.e., level of evidence + quality [study strengths and weaknesses])**
Author, Year, Title	**Theoretical basis for study** **Qualitative Tradition**		**Number, Characteristics, Attrition rate & why?**	**Independent variables (e.g., IV1 = IV2 =)** **Dependent variables (e.g., DV =) Do not need to put IV & DV in Legend**	**What scales were used to measure the outcome variables (e.g., name of scale, author, reliability info [e.g., Cronbach alphas])**	**What stats were used to answer the clinical question (i.e., all stats do not need to be put into the table)**	**Statistical findings or qualitative findings (i.e., for every statistical test you have in the data analysis column, you should have a finding)**	• **Strengths and limitations of the study** • **Risk or harm if study intervention or findings implemented** • **Feasibility of use in your practice** • **Remember: level of evidence (See PICOT handout) + quality of evidence = strength of evidence & confidence to act** • **Use the USPSTF grading schema http://www.ahrq.gov/clinic/3rduspstf/ratings.htm**
Almkuist, 2017, Using Teach-Back Method to Prevent 30-Day Readmissions in Patients with Heart Failure: A Systematic Review	This study follows the use of teach-back education and decreasing the rate of hospital readmission.	SR	Ten studies that focused on teach-back education in heart failure patients (p. 311).	**Independent variable:** Teach-back education for heart failure patients was the independent variable in all of the included studies (p. 309).	All studies were compared in an evaluation table and results were discussed (p. 312).	All results contained statistical results and showed improvement since the implementation of the intervention (p. 312).	Some studies in this review found a reduction in readmissions when using the teach-back method of education. The use of the teach-back method should be combined with other initiatives to reduce	LOE 1. Limitations include small sample sizes and possible bias. I would use these results in my practice by implementing teach-back education to all heart failure patients. It does not require an extensive amount of monetary funding.

				Dependent variable: reducing readmission rates and increasing patient experience (p. 309).			readmission (p. 312).	
Canon-Montanez, W., Duque-Cartagena, T., & Rodriguez-Acelas, A. (2021). Effect of educational interventions to reduce readmissions due to heart failure decompensation in adults: A systematic review and meta-analysis.	By equipping the nurses with the ability to use the teach-back education, the patient will benefit from the increased knowledge.	Qualita-tive (p. 280).	Thirteen nurses with at least two years of professional experience with HF patients, have met migrants, and use self-care counseling (p. 280).	**Independent variable:** the use of teach-back education in heart failure patients. **Dependent (outcome) variable(s):** Finding a balance in self-care**,** linguistically related challenges, culturally related challenges to think outside the box, to make use of proven experience,	The analysis and data included quotes from participants and overall themes throughout the experience. This is appropriate for the qualitative study (p. 282).	The data was collected by asking the participants a list of designated questions and transcribing the conversation exactly (p. 282-285).	The use of teach-back education was reported as a positive addition. The results provide understanding to the nurse's perspective of incorporating teach back education while improving the patient's experience as well (p. 285)	LOE 6. One of the main limitations include interviewing a small sample group. This study helps to provide a different perspective for the benefits of using the teach-back method with HF patients.

				adequate use of interpreters, teamwork, building a caring relationship, patient's knowledge and responsibility, and relatives as an asset (p. 280).				
Iqbal, Z., Parveen, M., Parveen, M., Azhar, M., Bjatti, Y., & Ali, A. (2019). Impact of nursing discharge instructions on readmission rate in heart failure patients: A comparative study.	Ensuring the patient and family members are educated in the diagnosis helps to decrease hospital readmission rates.	Quasi experimental study (p. 160).	Eighty patient in the acute care setting were included in this study. The sample was split in half to include 40 patients in each group.	**Independent variables (IV):** discharge teaching was conducted at discharge, on follow up day, and the 7th and 30th day (p. 166). **Dependent variable (DV):** DV1=reducing hospital readmission rates DV2 improving patient	A questionnaire was sent to all participants to gauge their knowledge and feeling toward their treatment plan (p. 163).	Data was analyzed through a questionare. Results were compared in a table that identified common themes (p. 160). Results from the questionnaires were combined and the two groups were compared.	Findings included readmission rates among the control group were 66.7% while the intervention group were 20% (p. 161).	LOE 3. The first limitation was the groups not being randomized. The next limitation included smaller sample sizes and limited vartiablity. The study included a majority of men (p. 162). This study clearly defined the steps that they took to conduct the study. This study is applicable in many different settings and could be easily replicated. The study suggests that frequent teaching will improve patient outcomes and quality of life.

				outcomes (p. 160).				
Mesbahi, H., Kermansaravi, F., & Kiyani, F. (2020). The effect of teach-back training on self-care and readmission of patients with heart failure.	Through using the teach-back method, the readmisision rates for heart failure patients will be decreased.	Quasi experimental study (p. 2).	Eight patients were selected. Forty participants were in each group (p. 2).	**Independent variable:** Self-care training was performed individually using the teach-back method in four sessions, each lasting 30 to 60 minutes (p. 2) **Dependent variable:** Reducing HF patient readmissions and improving self-care education upon discharge (p. 3).	The collected data was analyzed using SPSS-22 software and the European Heart Failure Self Care Behavior scale (EHFSCB) (p. 1).	The EHFSCB was completed on all of the patients in the study upon discharge and three months. Results were compared between the two groups (p. 3).	After three months, the mean scores of total self-care behaviors during the intervention were significantly different be-tween the two groups ($P < 0.001$). Besides, the average number of readmissions due to heart disease three months after the intervention showed the positive effect of the intervention in reducing readmissions in patients in the intervention group ($P = 0.002$). (p.7).	LOE 3. This study showed that teach-back education can affect self-care behaviors positively and reduce the number of readmissions of patients with heart failure. This study offered a training regimen for nurses to teach self-care behaviors to HF patients (p.7).

Patel, H., Szkinc-Olsson, G., & Lennartsson Al Liddawi, M. (2021). A qualitative study of nurses' experiences of self-care counseling in migrant patients with heart failure.	By equipping the nurses with the ability to use the teach-back education, the patient will benefit from the increased knowledge.	Qualita-tive (p. 280).	Thirteen nurses with at least two years of professional experience with HF patients, have met migrants, and use self-care counseling (p. 280).	**Independent variable:** the use of teach-back education in heart failure patients. **Dependent (outcome) variable(s):** Finding a balance in self-care**,** linguistically related challenges, culturally related challenges to think outside the box, to make use of proven experience, adequate use of interpreters, teamwork, building a caring relationship, patient's knowledge and	The analysis and data included quotes from participants and overall themes throughout the experience. This is appropriate for the qualitative study (p. 282).	The data was collected by asking the participants a list of designated questions and transcribing the conversation exactly (p. 282-285).	The use of teach-back education was reported as a positive addition. The results provide understanding to the nurse's perspective of incorporating teach back education while improving the patient's experience as well (p. 285)	LOE 7. One of the main limitations include interviewing a small sample group. This study helps to provide a different perspective for the benefits of using the teach-back method with HF patients.

				responsibility, and relatives as an asset (p. 280).				
Rahmani, A., Vahedian-Azimi, A., Sirati-Nir, M., Norouzadeh, R., Rozdar, H., & Sahebkar, A. 2020). The effect of the teach-back method on knowledge, performance, readmission, and quality of life in heart failure patients.	The use of teach-back education increase's the patients' knowledge. This increase of knowledge allows the patient to care for themselves and decreases the rate of hospital readmission.	RCT	A total of 70 heart failure patients were selected (35 patients for each group) to be a part of this study.	**Independent variable:** in this study the use of teach-back education in heart failure patients (p. 2-3). **Dependent variable:** decreasing the rate of hospital readmission and increasing knowledge in patients (p. 2-3).	The data collection instrument included a SF-36, which measures the quality of life in different dimensions. This allows the data to be measurable and reliable (p. 3).	The data was analyzed by tracking the readmission rates in heart failure patients (p. 2-3).	This article supports of the use of incorporating the teach-back method for heart failure patients. Participants reported increased satisfaction and an improvement in their health literacy concerning their disease (p. 4).	LOE 2. The strengths include randomization of the participants, limited to no bias, and a large sampling. Some limitations are completing the study on a specific population of heart failure patients. I would include these findings into my practice. This intervention is very easy to incorporate into my practice and offers a lot of benefits. I would make sure to teach staff members on the proper technique and make sure that they are comfortable in their knowledge.

Hart, J. & Nutt, R. (2020). Improving inpatient education and follow-up in patients with heart failure: A hospital-based	Understanding how individuals with heart failure make self care decisions aimed at managing disease symptoms.	Quasi Experimental	Criteria for eligibility included: (a) inpatients ≥18 years old with an admitting diagnosis of HF, (b) admission to one of two inpatient cardiac nursing units, (c) English-speaking, (d) planned discharge to home, and (e) working telephone number for contact. A total of 36 patients were included in the study	Independent variable: heart failure education, Dependent (outcome) variable(s): decreased hospital readmissions and improving delf care education.	No specific analysis tests were used in this study.	The intervention and control group were compared for hospital readmission rates.	In the 30-day readmissions, a 24.8% decrease was seen in the group receiving standardized education versus control. In the intervention group, 12 of 62 patients were readmitted, and in the control group, 23 of 52 were readmit- ted, representing 19.4% and 44.2%, respectively	LOE 3. Weaknesses include utilizing a small sample of patients with HF, and the different timeframe for the comparison group could con- found the results. This project was piloted over 2 months and only evaluated short-term clini- cal outcomes; no recommenda- tions could be made on out- comes beyond 30 days post-discharge.
Salahodinkolah, M. K.,	The conceptual	Literature review	71 articles were used in the	**Independent variable**: educational	The study did not use any specific tests	The included table broke	Results were organized into four different	LOE 1. The limitations of this study were the studies that their full text was not available or there were

Ganji, J., Moghadam, S. H., Shafipour, V., Jafari, H., & Salari, S. (2019). Educational intervention for improving self-care behaviours in patients with heart failure: A narrative review	framework involved improving patient outcomes and overall quality of life.		study. At the beginning of the search, 340 articles related to the self-care education of heart failure were obtained, and after deleting repetitive articles, 280 articles were left. After screening of articles, 100 articles were removed due to nonrelevance and abstract, and 180 full-text articles were investigate	interventions including face-to-face training sessions, educational writing tools, and home visitation by follow-up phone call. Dependent (outcome) variable(s): decreased hospital readmissions and improving delf care education	to analyze the data. Results were grouped under common themes and results were summarized.	the results into four separate categories that included the appropriate articles.	categories. The teach back education category The study did not use any specific tests to analyze the data. Results were grouped under common themes and results were summarized. All other categories, including home visitation, group training, and electornic learning all showed improved patient outcomes.	language restrictions and abstracts of articles. Strengths included a large sample of articles and similar patient populaions.

			d. After final reviewing, 109 articles were excluded due to repetition and similarity.					
Toukhasati, S. R., Jaarsma, T., Babu, A. S., Driscoll, A., & Hare, D. L. (2019). Self-care interventions that reduce hospital readmissions in patients with heart failure; towards the identification of change agents.	Behavior modification theories provide a useful framework for understanding and predicting responses to behavioral interventions, such as those addressing self-care.	Meta analysis	5 RCT articles were used. The study did not discuss the search process or exclusion criteria.	**Independent variable:** heart failure education, self-care interventions, and self-reporting symptoms **Dependent (outcome) variable(s):** improved outcomes with self-care interventions	The Coventry, Aberdeen & London-Refined (CALO-RE) taxonomy was used a benchmark for the study.	Two tables were included. The first stated the results from the meta analysis of the 5 articles and the second eas the CALO-RE benchmark.	Taken together, the literature suggests that self-care interven-tions for patients with HF have potential to improve self-care and to improve clinical endpoints (including lower risk of unplanned hospital readmissions, but perhaps not mortality	LOE 1. Limitaytions included no discussion on the search process or exclusion criteria. No discussion on bias or risk of false information.

Oh, E. G., Lee, H. J., Yang, Y. L., Lee, S., & Kim, Y. M. (2021). Development of a discharge education program using the teach- back method for heart failure patients	The conceptual framework consisted of standardizing an educational program in order to ensure every patient received the same standard of care.	SR	MEDLINE, CINAHL, Embase, The Cochrane Library, and Web of Science were used to search experimental studies. The search terms were "discharged patient," "teach-back," and "30-day readmission" 5 articles were used in the study.	**Independent variable:** Teach-back communication, Self-management Dependent (outcome) variable(s): Knowledge, Performance, Physical function, Role physical, Body pain, General health	The study did not use any specific tests to analyze the data. Outcomes were grouped in similar themes such as self-care, self-efficacy, symptom, satisfaction, and dependence on caregiver. This was appropriate.	The understandability of the educational material among patients was 90.2%, and the actionability was 91.3%. The understandability and actionability of the educational material among nurses were 94.6 and 86.8 %, respectively. All but one of the scores evaluat- ing the quality of the program exceeded 70%, the cutoff point. The patients' response to the actionability item "Provided instruction	The overall CVI for the program was 0.96, and all item CVIs were greater than 0.8. The understandability and actionability were 90.2 and 91.3 % in patients, and 94.6 and 86.8 % in nurses.	LOE 1. Strenghts include a systematic approach to generating a program and a ro- bust and logical process for developing a program. It also provides an essential process to design engaging learning and training programs. The first limitation of this program was developed for only one tertiary hospital in Korea, which means restric- tion of the generalizability. To test external validity, more discharge educational program using TBM should be implemented and evaluated as the experimental stud- ies or the quality improvement project at various set-tings. Second, the outcome measurement for self-care was accounted for on the self-reported questionnaire, so we cannot assume the real change in behaviors. To over-come this limitation, monitoring objective health behav- iors using internet of medical things devices could be one way.

						on how to perform cal-culations" was 66.7%		
Breathette, K., Maffett, S., Foraker, R., Sturdivant, R., Moon, K., Hasan, A., Franco, V., Smith, S., Lampert, B. C., Emani, S., Haas, G., Kahwash, R., Hershberger, R. E., Binkley, P. F., Helmkamp, L., Colborn, K., Peterson, P. N., Sweitzer, N., & Abraham, W. T. (2018). Pilot randomized controlled	The theory that guided the study was improving staff's education concerning the heart failure diagnosis.	RCT	Randomization included 60 patients to treatment and 66 to control. A total of 13 patients withdrew prior to intervention (treatment n=4, control n=1) or were lost to follow-up (treatment n=3, control n=5). Average age was 60.6 years ± 13.2. The majority of patients	**Independent variable:** NP education, standardized education, heart failure patient readmissions **Dependent (outcome) variable(s):** improved patient knowledge, improved caretaking.	Outcomes were compared using chi-squared analyses, t-tests, and Mann-Whitney U tests in SAS, version 9.4 (SAS Institute, Inc., Cary, North Carolina).	All-cause readmission rates at 30 days trended lower in patients with treatment compared to control [treatment 13.2% (7/53), control 26.7% (16/60), p=0.08], but was not significant. The survey response rate was 81.1% (43/53) among treatment and 71.7% (43/60) among control patients. Overall patient satisfaction	The 30-day readmission rate trended lower for treatment compared to control, but results were not statistically significant [13.2% (7/53), 26.7% (16/60), respectively.	LOE 2. Limitations include the study being underpowered. This was a single-center pilot study. The intervention will need evaluation in multiple centers to confirm positive trends and enhance external validity. Second, the latter end of the study had no NP education, and the intervention arm of tablet education combined with heart failure binder trended towards worse results than heart failure binder alone. This highlights the importance of one-on-one education with an NP.

trial to reduce readmission for heart failure using novel tablet and nurse practitioner education.			were men and had heart failure with reduced ejection fraction			scores trended towards higher satisfaction with treatment than control [treatment median 10.0 (interquartile range 7.5–10.0), control 8.3 (6.0–10.0), p=0.08		
Caluya, J. (2021). Impact of educational intervention in reducing 30-day heart failure readmission. *Continuous Quality Improvement,* 30(5), 309-313.	Improving patients' understanding of their diagnosis and improve outcomes.	QI	165 nurses were included from the facility.	**Independent variable:** standardized education to the nurses **Dependent (outcome) variable(s):** decreased hospital readmission rates, improved patient outcomes, increased competency among staff.	Nurses' Knowledge of HF Education Principles Survey (NKHFEPS) was used to assess the nurses' knowledge. This was appropriate.	All of the survey answers were compiled on the included tables.	The 30-day overall mean HF read- mission rate for 3 months before the intervention was 19.53%; at 6 months after intervention, the mean was 15.35%, a 21.4% reduction in readmission rate	LOE 3. Limitations included nursing not always docutmenting when educstion was completed, there was not absolute compliance by the nurses, and no one observed the nurses educating to confirm the right information.

Legend: HF: Heart failure; LOE: Level of Evidence; RCT: Randomized Control Trial, SR: Systematic Review; NP: Nurse Practioner