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Enhancing the Efficacy and Cultural Sensitivity of Heart Failure Education

For Spanish-speaking Hispanic Patients at Hospitalization and Through Phone Follow-up.

A Capstone Project Presented By:

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Abstract

Heart failure (HF) is a disease with a high morbidity rate and is associated with a high rate of hospital readmissions and medical complications. Therefore, medical insurance costs and hospital resource utilizations are increasing yearly. The American Heart Association, The Heart Failure Society of America, and American College of Cardiology have published different clinical practice guidelines for heart failure management; these organizations have acknowledged the importance of patient self-care administration. Although interventions combining patient education, medical therapy, physical therapy, and post-discharge management in patients with heart failure have demonstrated benefits in patients, the gains attributed to heart failure patient education alone during hospitalization and post-discharge is not well-known. This Capstone project indicates that patient education programs during hospitalization and post-discharge may improve clinical outcomes in patients with heart failure, and decrease readmissions. However, heart failure patient who are primarily Spanish speaking have not demonstrated the same level of positive outcome as other patient populations as reported from a one year review of patient outcomes after initiation of the HF program at BMC (Baystate Medical Center). English programs for patient teaching and follow-up have improved the re-hospitalization from 20.3% (in 2010) to 18.7% (in 2011) of patient but the improvements are not as strong in Spanish speaking patients from 22.7% (in 2010) to 23.9% (in 2011) in Cardiac unit M7 at BMC.

Introduction

Heart failure affects about 5-8 million Americans, and 670,000 new cases are diagnosed each year (American Heart Association, 2010). One in five people diagnosed with heart failure die within one year. In 2006, 286,754 deaths were reported with heart failure as the causal reason (American Heart Association, 2010). In the USA, hospital discharges have increased from 877,000 in 1996 to 1,106,000 in 2006. In 2010, the expected direct and indirect costs of heart failure may amount to \$ 39.2 billion (American Heart Association, 2010).

Looking at these numbers and statistics, there is a need for improving self-management and clinical education in heart failure patients. Patients should have the knowledge and skills to prevent or decrease the negative consequences of heart failure and improve their quality of life. Some studies demonstrate that education during hospitalization and pre-discharge, as well as outpatient education programs, improves the clinical outcome of heart failure patients. These programs show a reduction in readmission rates, length of stay, health care costs and improved self care behavior (Hart, Spiva, & Kimble, 2010).

The purpose of this Capstone Project is to enhance the efficacy and cultural sensitivity of HF education for Spanish-speaking patients at hospitalization and through phone follow-up by providing the standard HF education in Spanish for Spanish Speaking HF patients as well as giving patients an instruction booklet in Spanish and one in English to take home with them.

Background/Significance

Heart failure or congestive heart failure is a chronic, long-term condition which can develop rapidly. Heart failure is defined as the heart's inability to provide enough blood flow to meet the body's needs. The condition may affect only the right side (right-sided heart failure) or only the left side (left-sided heart failure) of the heart. More frequently, both sides of the heart are involved (Fink, 2009). Heart failure is a common, costly, disabling, and potentially deadly condition. In developed countries, 2% of adults suffer from heart failure; in those over the age of 65, the rate increases to 6–10%. Heart failure can cause a number of symptoms including shortness of breath, weight gain, difficulty sleeping, fatigue, palpitations, exercise intolerance, and swelling of the ankles, feet or abdomen. Heart failure is diagnosed with x-ray, echocardiography, ECG, cardiac stress test, CT or MRI of the heart, and blood tests. Treatments consist of lifestyle measures (smoking cessation, light exercise, breathing protocols, and dietary modifications), medications, heart assist devices (pacemaker or cardiac defibrillator) and surgery (Lidenfeld et al., 2009).

Patients with heart failure have chronic conditions that can require multiple hospitalizations during the year. These re-hospitalizations are related to the physiologic decompensation of their cardiovascular system. Some patients experience multiple hospital admissions, which could be likely related to inadequate teaching regarding disease management,

prevention, medication compliance, unhealthy food habits, and other health conditions. Each rehospitalization is costly for any health care center (Boutwell et al., 2009).

Medicare uses the “case base” system to pay hospitals for inpatient care, in which hospitals receive one single payment for an entire inpatient episode of a given type. To implement this system, Medicare categorizes all hospital inpatient care into 746 distinct “medical-severity adjusted, diagnosis-related groupings,” known as MS-DRGs. Inpatient episodes are primarily grouped by the principal diagnosis and then subdivided by the nature of co-morbidities or complications. Each admission for the same diagnosis within a thirty day period is considered one episode of care. Therefore, if the patient is readmitted with the same diagnosis within 30 days after discharge, the hospital cannot bill Medicare for the expenses related to the second admission (Reinhard, 2011; Chan et al., 2009). With these Medicare guidelines, Baystate Hospital created the heart failure unit to minimize financial risk by reducing the number of heart failure patients re-admitted within thirty days. One way to reduce avoidable readmissions in patients with heart failure is using clinical education to enhance healthy behaviors, improve health status and decrease health care costs (Hines, Yu, & Randall, 2009).

Problem Statement

Patients with a poorly managed heart failure require multiple avoidable hospitalizations during the year related to the physiologic decompensation of their vascular system (Fink, 2009). These readmissions are most likely related to poor disease management, incapable prevention, incompetent medication compliance, and other conditions. In 2009, Baystate Hospital had a 30 % readmission rate of patients with heart failure. These readmissions are costly to the facility and insurance carriers. Baystate Hospital had 34,546 admissions in 2010 and 107,371 emergency

cases (U.S. News Health, 2011), so costs and readmissions are increasing each year. One way to reduce readmissions in patients with heart failure is by enhancing the efficacy and cultural sensitivity of heart failure education for Spanish-speaking Hispanic patients at hospitalization and through phone follow-up in BMC by providing the standard HF education in Spanish for Spanish speaking HF patients, as well as by giving them an instruction booklet in Spanish and one in English to take home with them.

Review of Literature

According to different researchers heart failure (HF) is a commonly occurring diagnosis that results in significant costs and requires long-term monitoring and self-care to prevent recurrence of symptoms. Nurses have played a key role in monitoring and educating patients. Nurses are best suited for education improvement in heart failure patients, and they should help developed critical pathways to deliver heart failure focused care and teaching (Garreto & Carrol, 2007). Documenting nursing interventions is becoming paramount as major national groups such as the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) provide the incentives for facilities to collect and report quality measures. JCAHO has recognized HF prevention as one of the core diagnostic options that hospitals in need of continuing accreditation may choose to evaluate their care quality. The National Guideline Clearinghouse, The Heart Failure Society of America, The American College of Cardiology Foundation, and The American Heart Association are all making and renewing practical guidelines for heart failure (Lindenfeld et al., 2010; Hunt et al., 2009) .

Other foreign organizations such as The European Society of Cardiology and Cardiac Society of Australia and New Zealand are also creating new management guidelines for the

Enhancing the Efficacy and Cultural Sensitivity of Heart Failure Education 7

diagnoses and treatments of heart failure (Swedberg et al., 2005; National Heart Foundation of Australia, 2006).

One study in Italy evaluated the importance of disease management for elderly patients with heart failure. Del Sindaco et al. 2007 made interventions in merging hospital-based and home-based care among the cardiologist, nurse care coordinator and primary care provider. Nurses in this study cannot prescribe or change treatment without medical consult, but they were involved in the process of education, clinical monitoring and emotional support. This study confirms that a collaborative method in management HF patients improves outcomes and is long term cost-effective in Italy and other countries.

In the United Kingdom, chronic heart failure is on the rise concerning readmissions to hospital and the length of stay. Williams et al. (2008) state the importance of clinical nurse specialist in the management of heart failure patients. Having a clinical nurse specialist to reduce hospitalizations via the nurse-led outpatient care or home-based interventions has been evaluated positively in a number of countries. In one study, 83 % of patients were highly satisfied with a presentation by clinical nurse specialist in a discharge education setting versus the 50% satisfaction rate when interacting with only staff RN and accompanying multidisciplinary team (Vreeland et al., 2011). Stauffer et al. (2011) created a research of effectiveness and cost of a transitional care program for heart failure by instituting a nurse-led transitional care program to reduce readmissions rate for heart failure patient in hospitals. The authors made interventions such as practice nurse home visits after 72 hours of discharge and visiting the patients' homes eight times with access to a telephone hotline; in addition to this, intervention protocols were given to patients and their families.

Enhancing the Efficacy and Cultural Sensitivity of Heart Failure Education 8

Despite improvement therapies for heart failure patients, this disease continues to cause substantial hospitalization, disability, and death in minority communities especially among Hispanics, African-American and other non-white populations (Sisk et al. 2006). Lip et al. 2004 found data that black patients contrasted with white patients, containing a similar mortality but greater functional decline after hospitalization of heart failure. Laditka & Laditka 2006 found in a few studies that preventable hospitalization rates were prominently elevated for African American and Hispanics than for non-Hispanics whites for almost all health conditions, both for women and men; authors assumed that primary care systems should be able to prevail over most challenges of disease prevention using outreach measures like improved health education and promotion, the access of translation services, cultural competency training and other measures.

Hispanics are now the largest minority in the United States representing 16.3% of the total U.S. population. The American Heart Association (AHA) reported that 29.3% of more than 117,000 Hispanics will die from heart and stroke diseases each year (AHA, 2010). Some of the major causes to this problem are diet, uncontrolled hypertension and difficulty accessing healthcare, little or no insurance and lateness in seeking medical treatment (Knoel, 2007). Puerto Rican Hispanics are the majority in Springfield, Massachusetts, and nurses and health care providers should be sensitive of common cultural beliefs and practices within this Puerto Rican culture. Being aware of cultural customs provides nurses and healthcare providers a greater insight into the patient and permits him or her to think about how these behaviors may impact in the health failure education (Knoel, 2007). Other researchers about ethnic racial groups with chronic diseases found differences in health-related quality of life (HRQL), where Hispanic patients have greater health improvement in HRQL over time in heart failure than non-Hispanic white and blacks patients (Riegel et al. 2007); one reason this is an imprecise estimation of the

chronicity of the illness in Hispanics. Hispanics in this research thought that symptom remission was a cure and that each exacerbation of symptoms was a separate illness unconnected to previous episodes. Another interpretation for this is that the interpretation of illness terms used by Hispanics in the United States is affected by communication barriers Spanish and English.

In one study from four hospitals in the Harlem neighborhood of New York City a nurse-led intervention focused on specific management problems in HF patients using bilingual nurses who counseled patients on diet, medication adherence, and self-management of symptoms through an initial visit and frequent follow-up telephone calls; this enhanced the functioning of the intervention- and lowered hospitalizations in ethnically diverse ambulatory care HF patients who have some systolic function (Sisk et al. 2006). Knoerl 2007 states the importance for the nurses and health care providers to deal with guidelines for local, institutional and culturally competent care; if there is a dearth of this type of care, the CLAS (Culturally and Linguistically Appropriate Services) standards may be helpful. Many Hispanics may respond to health care interventions and teaching if the patient senses respect, care, and trust in the interactions with the nurses and health care providers. An individualized, culturally sensitive approach can make a difference for a Hispanic HF patient; consequently, nurses and health care providers in BMC in the cardiac unit and ambulatory services need to build a culturally sensitive relationship with the Hispanic HF patients and their families (Knoerl, 2007). The use of bilingual services or translator (of the same gender as the patient if possible), and hiring a bilingual nurse educator or advanced clinical nurse could be a future solution in the improvement of Hispanic heart failure patients and in decreasing the readmission of this population in BMC.

Researchers have revealed that a mixture of optimal medication and cautious self management can decrease heart failure related-mortality and morbidity. While self-care training has been found to be effective in diminishing hospitalizations, national studies have demonstrated that only a small percentage of practices and health systems give heart failure self-management support (DeWalt, et al., 2009). One intervention recommended an initial one hour education session with a trained health educator, using a digital bathroom scale, educational notebook, and series of six follow-up telephone calls over two months followed by monthly calls for ten months to reinforce the educational messages.

Soran et al. (2008) further states that enhanced patient education, in addition to follow-ups using monitoring devices with an interactive program for HF patients are also successful for decreasing readmissions (Gaikward & Warren, 2009). In one study concerning the cost of medical services in older HF patients using enhanced monitoring computer-based telephonic systems and enhanced patient education was equally successfully in both interventions concerning health care outcomes and decreasing rehospitalizations.

One study monitors the follow-up of disease management using telephone calls to HF patients, thus improving clinical outcomes and reducing hospital readmissions (Riegel et al. 2006; Soran et al., 2011). One possible tool for medical professionals could be reinforcing heart failure education and assessing patients' conditions. Nurses can check weights, vital signs and symptoms by phone, and if necessary, to counsel about the titration of cardiac medication such as carvedilol or furosemide with the primary care provider or advanced practiced nurse (Paul, 2008).

Paul (2008) states that education at discharge is a vital factor of positive outcomes in heart failure, and poor adherence to education can lead to deterioration of the disease and further hospital readmissions. Paul estimates that 54% of hospital readmissions may be preventable; insufficient discharge planning and education or lack of patient follow-up is regular causes of readmissions.

HF teaching at hospitalization, discharge instructions, and patient phone follow-up remain significant factors for the care and treatment of HF patients. The purpose of HF teaching instruction is to help patients and their families understand the prognosis of heart failure, as well as the rationale for medication regimens, dietary limitations, activity recommendations, and signs and symptoms of a worsening condition. This literature review shows different barriers and solutions for the heart failure program for Spanish-speaking patients in BHS.

Application of the theory, model, or conceptual framework.

Awareness-to-Adherence Model

Boutwell et al. (2009) states that most of HF patients take as 5-15 kinds of medications and these patients do not always following their medication regimen. As a result, medication non compliance is one of the reasons for readmission in the medical center. Other causes of readmission are poor discharge processes, lack of timely follow-up, hesitation concerning self-management tasks, great dietary intake of salt products, excessive drinking, and a general misunderstanding about medications.

Due to the change of Medicare payments and other financial adjustments, the costs of hospital admissions and readmissions in patients with chronic heart failure are increasing.

Enhancing the Efficacy and Cultural Sensitivity of Heart Failure Education 12

Baystate Hospital is implementing clinical education and post-discharge interventions for hospitalized clients with cardiovascular diseases so that the patients and their families may prevent readmissions. One way to reduce readmission rates is to improve medication compliance and self-patient management through clinical teaching. The main goal of self-management of medications is to improve heart disease, to prevent health complications, or to prevent complications. For this purpose, a borrowed theory such as the Awareness-to-Adherence Model in the cardiac unit at BMC can be used in this capstone (McEwen & Wills, 2011). The Awareness-to-Adherence Model is close to this definition for awareness; however, it is practical in reducing readmissions that occur due to medical noncompliance and lack of heart failure teaching.

The Awareness-to-Adherence Model suggested by Pathman, Komrad, Freed, Freeman and Koch (1996) is a model for physician compliance which can be expanded and applied to additional clinical practices such as nursing. Pathman et al. (1996) recommended that when clinicians fulfill their goals with practice guidelines, they must first become aware of the guidelines, intellectually agree with them and, then decide whether to adopt them into their care they provide, regularly at the appropriate times. The Awareness-to-Adherence model was created to understand how physicians follow with new national practice guidelines for hepatitis B.

Using the Awareness-to-Adherence model this project can use the sequential and behavioral steps that HF patients make as they incorporate medications compliance with healthy life-style options. In this case, patients should be aware of their disease and health complications if they choose to not follow medications and healthy life styles (awareness); then agree with it in principle (agreement); then decide whether it is appropriate and feasible to use in their own

practice (adoption); and finally succeed in following all medication regimen and healthy styles at the appropriate times (adherence) (Henegan et al., 2007). Plus, the Awareness-to-Adherence model can be utilized by the providers to aid their heart patients. The same principle can be applied to nit nurses concerning following the HF clinical teaching guidelines to patients in the cardiac unit. First of all, nurses should be aware of the new guidelines about heart failure teachings; then, the personnel shall agree with these guidelines; next, the nurse should decide whether to use these guidelines in his/her own practice with all of his/her clients; and, finally, he or she should follow these guidelines at all proper times in the unit with all the inpatients.

Part of this middle theory that will be difficult to apply to heart failure patients will be due to their values or preferences, as well as providing enough information on benefits and damages of the disease to HF clients. Also, the limitations of time available for teaching from health care providers play a huge role in the heart failure teaching.

Finally, all interventions are aimed at enhancing the capacity of the individual and/or family to accomplish better self-management behaviors, including the management of symptoms, medical treatment, and significant lifestyle changes that are beneficial for the patients, medical centers, individuals, and health care providers. Spanish-speaking heart failure patients would gain a more significant quality of life; hospitals would have lower readmission rates, ultimately decreasing costs in the treatment of this disease.

Project Description, Implementation, and Monitoring

Description of the group, population, community, results of needs assessment or gap analysis

Enhancing the Efficacy and Cultural Sensitivity of Heart Failure Education 14

This Project took place in the heart failure program in the Mass Mutual 7 (M7) Unit at Baystate Medical Center, (BMC) in Springfield, Massachusetts. Baystate Medical Center is a 659 bed academic and teaching hospital that serves the population of Springfield (153,060) (Baystate Medical Center, 2010). BMC had 34,546 admissions in 2010 and into the emergency room 107,371 (U.S. News Health, 2011). Springfield 4 unit (renamed M7) has 2008 admissions and 341 readmissions (16.98%). Patients in Springfield unit are multicultural with a large number of Hispanic and Puerto Rican patients who speak English as a second language.

The heart failure program was implemented in 2005 by a cardiologist-physician team in the Baystate Medical Center. In 2010 a heart failure coordinator-nurse (English speaking only) role was initiated to help reduce readmissions and improve the health care outcomes of heart failure patients. The HF program at S4 (now M7) unit had a great success on reducing the rehospitalization in patients with heart failure at BMC during 2010 and 2011. At the 16.98%, the readmissions still high during 2010 in general English programs for patient teaching and follow up have improved the re-hospitalization from 20.3% (in 2010) to 18.7% (in 2011). However, the improvements are not as strong in Spanish speaking patients from 22.7% (in 2010) to 23.9% (in 2011) in Cardiac unit S4 (now M7).

While there are some Spanish language heart failure material in the unit, some Hispanic patients get HF teaching education in English languages which is then translated to Spanish through bilingual family member or a translator in the M7 unit (ex Springfield 4 Unit); later, the HF coordinator accomplish the phone follow after one week after discharge through a phone-translator service or bilingual family member. The DNP candidate evaluated the effect of

providing standardized HF clinical teaching in the Spanish language to Hispanic HF patients at BMC, as well as phone follow up after discharge in Spanish.

Implementation and Protocol/Plan for individualized project/program/intervention tailoring

Protocol

- First, the nursing clinical manager of the Heart Failure nursing unit (Mass Mutual 7) identified any Spanish speaking newly diagnosed Heart Failure patients who are admitted to M7.
- Second, the DNP candidate introduced the project to the patients and his/her family and assess patient knowledge using HF teach back instructions tools in Spanish from standardized hospital HF tool/booklet (Appendix 2).
- Third, he did teaching in Spanish language to Hispanic patients using HF standardized hospital teaching instructions tools/booklet. The booklet addresses all of the following: activity level, diet, discharge medications, follow-up appointments, daily weight monitoring in pounds, and what to do if symptoms worsen (documents on Education HF Spanish and English).
- Fourth, the DNP candidate assessed the post teaching heart failure teaching instructions using HF tools in Spanish language assessing follow-up appointments, daily weight monitoring, and what to do if symptoms worsen (Appendix 2).

- Fifth, he did the post satisfaction evaluation of the Hispanic patients with heart failure about HF teaching in Spanish language (Appendix 1).
- Sixth, Heart failure patients discharged home were given written instructions or educational material upon discharge and during the hospital stay, addressing all of the following: activity level, diet, discharge medications, follow-up appointments, daily weight monitoring, and what to do if symptoms worsen in Spanish language. They were also offered to take the instruction booklet home in English also for English-speaking family members' reference (Documents on Education HF Spanish).
- Seventh, the DNP candidate did the phone follow-up call by phone to these patients in Spanish in the first week after discharge as heart failure protocol.

The measures were obtained through questionnaires to Hispanic patients in Spanish language from pre and post -teach back HF teaching (Appendix 2) and satisfaction survey (Appendix 1). Each patient was identified by MRN without names in paper format to be analyzed later in computer format by quality department of BHS. Then the readmission data of these patients were tracked at 30 days from the day of discharge after Spanish HF teaching looking for readmission (yes or no). The purpose of this project was to improve Spanish-speaking patients' understanding of Heart Failure management through Spanish language HF teaching and to enhance patient's satisfaction, and decrease hospital readmission in this population.

. Selection of Subjects and subject participation

The target population were be identified by the nursing manager from the hospital electronic data every day during the month of May2012. The target population was all Spanish

speaking patients who were willing to get HF teaching in Spanish language admitted to the heart failure unit in May 2012. The Hispanic patients who were included in this project were those 18 to 85 years old with first time diagnoses of acute or chronic heart failure in the BMC of Springfield, MA. The DNP candidate explained the project to each patient and his/her family member. The DNP candidate did the heart failure teaching and satisfaction questionnaire. Any potential target patient could terminate his or her inclusion in the quality improvement project at any time without prejudice, and they were given heart failure education writing in Spanish and English languages for themselves and their families as part of BMC HF protocol. The aim was to use this opportunity as pilot evaluation quality improvement project, and about 12 Hispanic patients that fit the inclusion criteria were the target number for this one month pilot project.

Evaluation

After finishing getting the target population in June of 2012, about 12 Spanish-speaking patients with heart failure, the capstone project evaluator analyzed pre- and post-heart failure teaching interventions. Second, DNP candidate evaluated the patient satisfaction questionnaire. Third, the DNP candidate reviewed by hospital's computer system of readmissions at 30th in the hospital of these evaluated Spanish-speaking patients. Fourth, the DNP candidate informed all the results to Baystate Hospital administrators and to the University of Massachusetts graduate nursing program.

The DNP candidate used both qualitative and quantitative methods of analysis including interview anecdotes and interview results. The data analysis was the T-test to obtain

quantitative data regarding the pre- and post-teach back testing. Early hospital re-admissions were assessed. The qualitative data was obtained from answers in of the following: activity level, diet, and discharge medications, from pre and post test (Appendix 1). Another qualitative data was obtained from the patient satisfaction interview.

Thirty day readmission rates for these Spanish-speaking patients receiving the heart failure education and phone follow-up in Spanish by this DNP candidate was compared to the same rates for this population of patients admitted in 2011 at Springfield 4 unit , and it could be determined by chart number review

Organizational analysis of project site

The cardiac unit has thirty-two monitor beds, two cardiologists exclusively for heart failure, one floor manager, one clinical heart failure coordinator, one social worker, two case managers (nurses), thirty-two RN's working day and night in twelve hour shifts, fifteen medical assistants and administrative personnel. The documentation, orders, tasks, and clinical education are completely computerized with electronic clinical records in the hospital system. The quality control department from BMC was supporting the project as the organizational quality improvement project (Ramson et al.2008). The capstone project got all the approvals from quality improvement office, the program director, and other hospital administrators. The capstone project evaluator monitored and evaluated result pre- and post- intervention using HF teaching tool in Spanish and post-phone discharge follow-up in Spanish, the Spanish –speaking patient satisfaction questionnaire, and the readmission data of 30th day for Spanish-speaking patients. All the results were given to the Baystate Hospital administrators and to the University of Massachusetts graduate nursing program.

Evidence of stakeholder support

Key stakeholders for the project were the patients willing to participate, the primary care providers at the facility, the nursing staff, the unit manager Carlo Reale, RN, UMASS-Amherst, BMC IRB, Jodi Kashou, RN HF-coordinator and this DNP candidate. The Baystate Medical Center IRB made the approval of Capstone Project to permit the project's paperwork on April 24, 2012.

Description of the resources, constraints, facilitators, barriers, etc. to implementation at the project site

There was administrative support for this project. The M7 Unit is new one with HF patient computer data and filters. Also, the HF program has HF teaching written material in English and Spanish language for inpatients and their families. DNP candidate carried out the heart failure teaching instructions in Spanish for Spanish-speaking HF patients that were included in the project. A benefit to the nursing unit can be the reduction in staff workload for those nurses who would be expected to do the teaching to these patients during the project. The clinical educator from BMC M7 aided in heart failure education evaluation, obtaining re-hospitalization data 30 days after the subjects are discharged. The documentation was computer-based the DNP candidate could track the discharge data and their readmissions at 30th day. Missing documentation may be a barrier to data collection.

The patients and their families were provided the standard HF education booklets in Spanish and English during hospitalization and to take home. If booklets were not miss-placed or lost, there may not be a gap in home self-management follow-through. If project patients cannot be reached by phone or if they do not answer their phones, post-discharge follow up instruction

may be hindered, and that did not happen. Another potential problem were the evaluated patients may move to another place or be admitted to another hospital. Limitations due to loss of instruction booklets, missed opportunities for inclusion, and missed phone follow-up were minimized through careful instruction and persistent follow-through by the DNP candidate. One problem was the BMC IRB approval that took twice longer because of allowing for the Capstone project as Human subject project.

Project design and feasibility

This Capstone Project was an evaluation design and quality improvement project. This project evaluated satisfaction, knowledge of heart failure management, re-admission within 30 day of the day of discharge in the M7 unit BHS. The DNP candidate collected standard assessments of heart failure knowledge (see appendix 2). And he assessed satisfaction with the heart failure teaching (appendix 1). The data analysis was the T-test or appropriate statistical test to compare the pre- and post- knowledge testing. Early hospital re-admission was compiled for this one month period. The qualitative data was obtained from answers in of the following: activity level, diet, from pre and post test (Appendix 1). The patient satisfactions questionnaires were analyzed using descriptive statistics.

30-day readmission rates for these Spanish-speaking patients receiving the heart failure education and phone follow-up in Spanish by this DNP candidate were compared to the same rates for this population of patients admitted in May 2011 at Springfield 4 unit , and it could be determined by chart number review (Koelling et al. 2005). The readmission rates were collected through electronic data from BMC with cause of admission and/ or death by heart failure.

Data storage & confidentiality

The results were reported as aggregate data only regarding this patient population. These results were shared with nursing students and faculty colleagues at University of Massachusetts, Amherst, School of Nursing, with Dr Joan Roche & other faculty at UMass, as part of the student assignments for the completion of the DNP Capstone. The DNP candidate protected the confidentiality of each patient, and stored information collected from the teach-back questionnaire and satisfaction survey associated with the survey number and not patient's name, medical record, or date of birth,. A separate sheet was be used to collect identifiable information such as MRN and date of birth. This separate sheet called our coding sheet was be kept in a different locked file cabinet from the surveys in Baystate M7 unit clinical educators' office, M6321. This was so that the information that was collected cannot be inadvertently traced back to any patient. The DNP candidate asked or got access trough manager office of M7 cardiac unit for the HF target population every day from May and June 2012. At the completion of the project, the data was analyzed on computers in the clinical educator's office, then the material was shredded, and computer data was erased.

Goals and objectives of project with specific outcome indicators or expected outcomes listed in measurable terms.

Objective 1: - To reduce 30-day rehospitalization rates among clinic and hospital patients discharged home from Baystate Medical Center following an inpatient stay for a HF related illness.

Outcome Measure: -30-day rehospitalization rates for HF-related disease as obtained through administrative data sets.

Enhancing the Efficacy and Cultural Sensitivity of Heart Failure Education 22

Outcome Expectation: 10% decrease in 30-day readmission rates for HF-related disease published by the clinic and hospital administrative data sets.

Objective 2: Patients check his or her weight every day first thing in the morning.

Outcome Measure 2: - Percentage of patients that know how to weight every day after urination but before breakfast.

Outcome Expectation 2: Heart failure patients recognize gain weight 3 pounds in two days or 5 pounds in one week.

Objective 3:- Patients understand how to manage their medication regimen.

Outcome Measure 3: - Percentage of patients that demonstrate the ability to use their medication regimen.

Outcome Expectation 3:- 90% of the patients understand how to manage their medication regimen.

Objective 4: - Patients attend their schedule follow-up visits with primary care provider and or cardiologist.

Outcome Measure 4: - Percentage of patients who attend their schedule follow-up visits with primary care provider and or cardiologist.

Outcome Expectation 4: - 90% of the patients attend their scheduled follow-up visits with primary care provider and/or cardiologist.

Enhancing the Efficacy and Cultural Sensitivity of Heart Failure Education 23

Objective 5: - Patients demonstrate the ability to recognize low sodium diet.

Outcome Measure 5: - Percentage of patients that update the use of low sodium diet.

Outcome Expectation 5: - 90% of the patients demonstrate the ability to apply a low sodium diet.

Objective 6: - Patients verbalize an understanding of the basic pathophysiology of HF, and demonstrate effective symptom management.

Outcome Measure 6: - Percentage of patients able to “teach back” to the evaluator a list of effective HF self-care behaviors, indications of an impending disease exacerbation, and a description of the MAP.

Outcome Expectation 6: - 90% of the patients verbalizes an understanding of the basic pathophysiology of HF, and demonstrates effective symptom management.

Costs and plan to obtain

Quality office covered the educational staff with paper and the statistics expenses were be covered by private donations. Most of these expenses were covered by DNP candidate. The statistics person and the capstone project researcher worked as a volunteer unit. See below table by costs (Issel, 2004).

Human resources	DNP candidate volunteer and one statistics person volunteer Patient cost	150 hours x\$ 00.00 = \$00.00 2 hours x \$00.00 =\$00.00 30 patients x \$15 = \$450.00 (1 patient cost teaching= 30
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Enhancing the Efficacy and Cultural Sensitivity of Heart Failure Education 24

		minutes= \$ 15.00)
Informational resources	Computer hardware and software from Baystate Medical Center and personal computer	\$00.00
Physical resources:	Two reams of paper	or 0.04 each for copies = \$ 8.60
Monetary resources	Personal funding, requesting any monetary donation for statistics personnel	\$00.00
Transportation	Mileage fee and parking fee are free by DNP candidate volunteer.	(\$00.00 But (20 days x 4 gallons/day = 80 gas gallons or \$320.00 (today costs)
Managerial resources:	No additional managers are anticipated. The project facilitator is a DNP	\$00.00

	candidate	
Time resources:	Timeline is developed for study completion. No delay in meeting deadlines	\$00.00
Total costs anticipated for project is		\$778.60

iv. Institutional Review Board (IRB) Approval / Exemption.

The Capstone Project was designed as an evaluation project which was presented to the Baystate Medical Center system IRB in March; IRB approved as not human research in April 24, 2012. All patient information will be protected according to hospital IRB policies as well as policies surrounding Health Insurance Portability and Accountability Act (HIPPA) (U.S. Department of Health & Human Services [HHS]).

vi. Timelines

1/5/2012: Meet with key stakeholders throughout this period and get all letters and approvals from Baystate Health Systems in Massachusetts.

01/31/2012: Prepare data analysis and evaluation of project using year 2011 for the cardiac unit. Preparation of pre-capstone work.

Enhancing the Efficacy and Cultural Sensitivity of Heart Failure Education 26

04/24/2012: Acceptance of Baystate Medical Center IRB for capstone project as non-Human research. Prepare all aspects in place such as data information, documentation tools, hiring statistics personnel, and coordinates with stakeholders.

05/01-05/30/2012: Implementation of the Capstone Project. Meeting with all participants, and beginning all pre- and post- test interviews Education to all providers willing to participate will be completed by DNPc.

June 2012: Evaluation of data analysis of HF patients and the 30 day follow-up for readmission or mortality.

June 2012: Write evaluation of project and disseminate the findings to University of Massachusetts and Baystate Medical Center.

July 2012: Written evaluation of the Capstone Project and findings were submitted to the University of Massachusetts-Amherst and Baystate Medical Center. Final Capstone Scholarly Project was submitted to Dr. DeMartinis and Dr. Roche for final approval.

July 2012 – Evaluate for continuation of the project for 2012.

Part IV and V

--Results and Interpretation DNP capstone 2012

The capstone project found 12 Spanish-speaking patients who agreed to participate in the project during the May month of 2012. All patients were located in the cardiac unit M7 (ex Springfield 4) with primary diagnosis of heart failure and with only Spanish speaking only. Patient age was between 42 to 82 years old. Equally divided between male and female patients,

the patients ranged in age from 42 years to 87 years. All patients only spoke Spanish language and received the pre- and post- heart failure teaching intervention in Spanish. Then, the DNP candidate evaluated the patient satisfaction questionnaire. Then, the DNP candidate made phone call about HF teaching to those 12 Spanish-speaking patients in one week follows their discharge (Riegel et al. 2006; Soran et al., 2011).. Finally, the DNP candidate reviewed via the hospital's computer system the 30 day readmissions rates at the hospital in order to evaluate the effectiveness n for Spanish-speaking patients of HF teaching. This May 2012 patient group in M7 unit was comparable demographically and clinically to the May 2011 group. The results were positive after the candidates evaluate the quantity and quality statistics.

This resulted in an increased effectiveness 68 % from 39 % for the tailored HF education program for Spanish-speaking patient when comparing their comprehension before the HF teach back with the results after the HF teach back (table 1). For example, the item of knowledge of using less 2000 mg/day of Na in meals, the teach-back education improved from 19% to 60%. Using image-based visual aids to teach Spanish speaking patients how to recognize sodium level in a product's nutritional information, the patients, and comprehensions improved from 35 to 68 % (table 1).

The item -1500 cc fluid restrictions daily improved from 50% to 69%, this was the most difficult item, because of different cups at home. But Spanish speaking patients improved in this topic too.

Enhancing the Efficacy and Cultural Sensitivity of Heart Failure Education 28

The item -Daily weight changes improved from 40% to 60%. The DNP candidate factored in concerns such as fluid retention and the patients' worsening condition.

The item I + O meds, patients had trouble comprehending diuretics in terms of their daily regimen. This required more work on the part of the DNP candidate to educate the patients on the need for furosemide. However, this item showed improvement from 32 % to 50 %.

Patients were able to self-assess and determine whether or not call for medical help by signs and symptoms. This indicated a 32 %- 75% knowledge improvement when to call the primary care provider.

The item Obtain appointment with PCP improved from 60% to 94%. Patient understood the importance of follow up by their PCP in the outcome of their diseases. So, it was important to get a good improvement in this item.

The project found 100% satisfaction of patients on all four items in the satisfaction questionnaires (table 3). Also, the patient recognized me and appreciated that somebody from the floor was involved in the HF teach back, as well as primary care appointments. Patients really were happy and glad to talk and listen directly to DNP candidate bilingual HF teaching. They asked to request most RNs and PCP bilingual in Spanish language to talk directly their concerns and worries about their diseases. Patients were pleased to speak to a bilingual HF educator, and requested more bilingual primary care provider staff (Knoerl, 2007).

Another result was a reduction of readmissions with heart failure as primary diagnosis in the BMC in these 12 Spanish speaking patients at 30 days from discharge in the cardiac unit 7 from 40% in 2011 to 8.3 % in May 2012, and less than general readmission of Hispanic patients

(23.9%) for 2011. Of these 12 patients, two came back, and one came for primary diagnosis of pneumonia in other unit of BMC. However this is monthly average size sample for 2011. These results are even better than Less than average admission of 16.3 % in M7 (ex Springfield 4 unit) during 2011, April 2011 (18.88%), and June 2011 (14.29%) (Table 2).

This capstone project indicates positive results for heart failure teaching instructions in Spanish for Spanish-speaking HF patients. However, the pilot group's patient sample as well as the one month time frame is too limited in scope to draw more conclusive results.

Recommendations

Short term:

- RNs should use the onsite official translator at all times in order to ensure consistency in teaching material. Family members should not be used as translators in matter of HF prevention teaching (Knoerl, 2007). .
- Using bilingual Spanish-English speaking RNs in appropriate way as much possible in HF teaching for Spanish speaking only HF patients.
- Using or talk interpreter services for using schedule time for HF teaching and other questions to Hispanic speaking patients for example 9-11 am (Knoerl, 2007).
- Using less possible RN-patient ratio for appropriate time for HF teaching.

Medium time: Hiring bilingual OA (the unit does not have any bilingual OA) given that other units or medical offices have bilingual medical assistant in more heavily populated bilingual areas

Long term: When overall Hispanic patient population reach more percentage in the hospital, it would be necessary to hire more bilingual RNs and, most likely, a second HF coordinator with bilingual skills for HF teaching (Sisk et al. 2006).

The Hispanic population of Springfield, MA is 34.9% now according to the census 2010, and BMC's Hispanic patient population totals 10%. BMC should have an appropriate response to the need of this demographic which would include locating more bilingual nurses and primary care providers to gain access to this population (Sisk et al. 2006).

Conclusions

- 1) There was a 68% improvement from 39% among the Spanish-speaking patients when comparing their comprehension before the HF teach-back with the results after the HF teach back.
- 2) Changes in 30-day readmission rates as measure of overall program effectiveness decreased to 8.3% (May 2012) from 40 % (May 2011) and general 23.9% for 2011 for Hispanic patients.
- 3) Patient satisfaction according to the questionnaire was 100%.

This capstone indicates positive results for heart failure teaching instructions in Spanish for Spanish-speaking HF patients. However, the pilot group's patient sample size, as well as the one month time frame, is too limited in scope to draw more conclusive results. In order to create a better study, as well as tailor the HF teach back to better fit the needs of the patients, a better sample is needed, which includes more patients, a longer length of time, and, most importantly, more bilingual personnel (Sisk et al. 2006) to implement the heart failure teaching instructions program.

. Other

The capstone project is a project being done to complete an academic requirement for the DNP program of the University of Massachusetts/Amherst, School of Nursing. The aggregate results of the project will be shared with the faculty of the DNP-program University of Massachusetts/Amherst and quality department of Baystate Hospital. The outcome of the project is to enhance Spanish speaking Hispanic patient outcomes of increased understanding of HF teaching for better self-management and to potentially reduce early hospital re-admissions.

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Appendix 1

Patient Satisfaction evaluation interview by DNP candidate

1) The purpose of the Capstone project is to evaluate the effect of relationships between heart failure clinical education received in Spanish at hospitalization and through phone follow-up for Spanish-speaking patients and to assess their satisfaction with the tailored education and teach back.

2) The questions will be asked by DNP-candidate in Spanish language.

3) The patients satisfaction questionnaire will be 4 items, and each item will have 5 responses from very dissatisfied to very satisfied score between 0 and 4. A higher score indicates more satisfaction with the clinical education.

4) 0= not satisfied, or 1= satisfied

5) Item question

5.1 Do you like the HF clinical teaching in your language?

5.2 Do you like the written materials in your language? Is it helpful to have written materials at home in English as well?

5.3 Do you like the presentation of the HF materials by DNP-candidate?

5.4 Do you recommend the use of bilingual person in your HF teaching?

6) The data can use scale, and it can be scored and analyzed by statistical programmers such SPSS or EXCEL

Appendix 2

Pre and Post test heart failure teach back clinical education.

1) DNP-candidate will do to both group.

2) Information: Language (English and Spanish), Medical record number, Gender, and Date of birth.

**Findings
Evaluation**

Teach back note/ Heart Failure/CHF

Nursing Identify Primary Learner Language _____ in CIS, via RN to I
2,000 mg or less NA restriction daily (500 mg a meal x3 meals, 250mg a snack x2 snacks daily
,give restriction form) with %teach back

Reading labels with patient (give pre- printed nutrition labels)
Explain hidden salt, + 5 different types of salt (give pt info on "Why salt in harmful to patients with HF" and teach no salt shaker with %teach back.

1500 cc Fluid Restriction daily (which is equal to 48 oz daily or (6)8ozcups) (give pre-printed restriction form) with % teach back.

Daily weights (every am after urination but before breakfast, tell them to write on calendar to track. (Refer patient to HF zone sheet. Explain quick weight gain if fluid weight.
%teach back.

Signs+Symptoms to call MD (yellow zone) with _____% teach back.

Call to obtain appointment with PCP and Cardiologist as soon as arrival home (provide phone
%teach back.

HF medications (in layman's terms explain ACE/ARB/BB/diuretic, explain what the med does + why they need it) with __%teach back..

Appendix 3-4(to be scanned in PDF format as addendum to this Capstone)

Tables 1

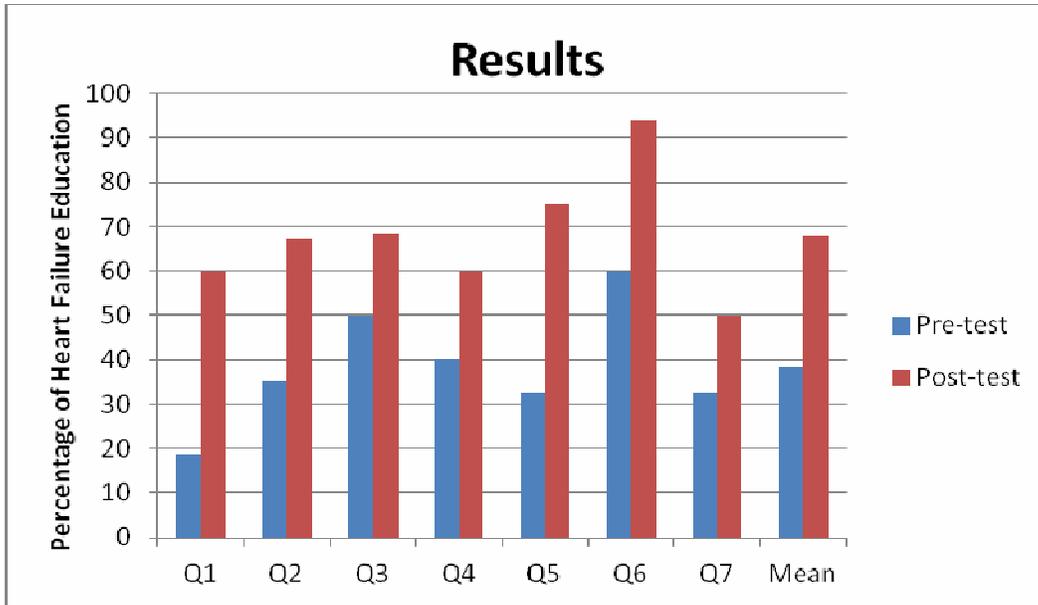


Table 2

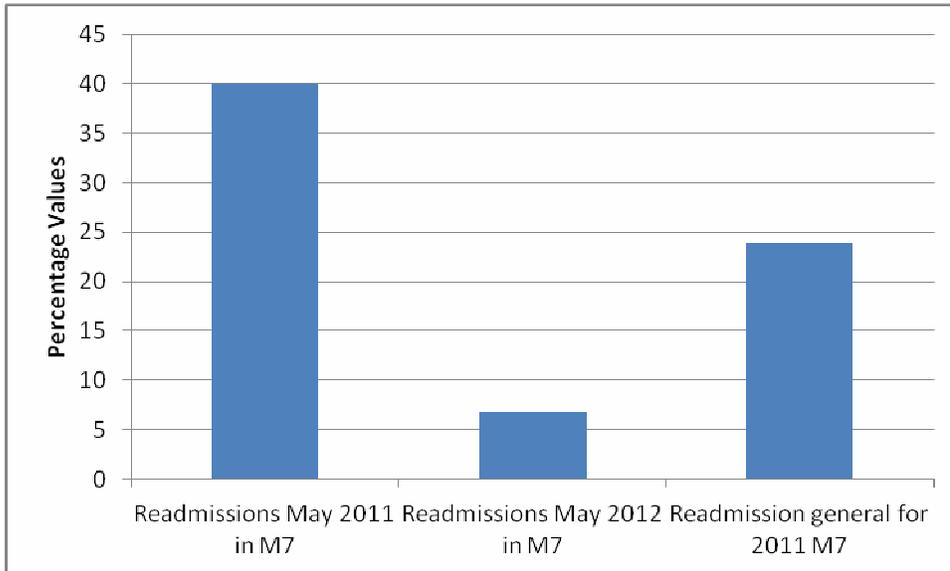


Table 3

