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Effectiveness of Cognitive Screening for Heart Failure Patients

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Walden University

College of Health Sciences

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Comfort Nkengla

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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Walden University
2016

Abstract

Effectiveness of Cognitive Screening for Heart Failure Patients

by

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Bachelor/Masters of Nursing and Health Care Education, University of Phoenix, 2008

Bachelor of Science, University of Valdosta, 2005

Project Submitted in Partial Fulfillment

of the Requirements for the Degree

Doctor of Nursing Practice

Walden University

July 2016

Abstract

Cognitive impairment is commonly seen in the elderly population. It is unclear if cognitive deficit in heart failure (HF) patients is a primary factor for higher hospital readmission rates in this population. The Centers for Medicare and Medicaid Services have established strict guidelines for reimbursement on readmissions that occur within 30 days. It is imperative that organizations identify and rectify issues that impact readmissions. The aim of this project was to determine if there is a reduction in HF readmission after patients are screened for cognitive impairment. Orem's self-care model guided the project by providing a framework of inquiry regarding the impact of cognitive impairment on self-care deficits and the need for support for persons with heart failure. The project examined the hospital's 30-day readmission rate for the HF patients who received cognitive screening using a chi-square test; this analysis excluded HF patients who were not screened for cognitive impairment. Readmission rates for all patients during a 6-month period were examined. Two hundred sixty-eight patient records were reviewed; 48 patients were readmitted, and of those, 28 patients had completed the cognitive assessment, meeting the criteria for the project. The change in readmission rates was not significant ($p = 0.196$), suggesting that cognitive screening of patients is not associated with reduced readmission rates. Further research should examine the role of cognitive screening in addition to other resources on the 30-day readmission rate of HF patients. Social change will be improved as a result of the improved quality of life for HF patients and the reduced per-capita cost of health care in the United States.

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Dedication

To my father and mother - As a young girl, you instilled in me to always follow my dream and for that I will be forever grateful.

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Section 1: Nature of the Project

Introduction

The prevalence of heart disease in the United States is an important reason why health care organizations and communities should allocate resources to encourage self-management interventions designed to improve compliance to treatment and sustain lifestyle changes. The inconsistencies in how patients with heart failure comply with treatment regimens have perplexed many health care providers. Heart failure “accounts for over 1,084,000 hospitalizations annually and is nearing 34.8 billion dollars in health care costs” (Britz & Dunn, 2011, p.480). Many hospitals are addressing the problem of increased readmission and finding ways to reduce the number of heart failure patients readmitted within 30 days of discharge. One of these measures includes screening the patients’ cognitive status in order to individualize each patient’s plan of care based on their results, and to allocate resources to manage their diseases.

Problem Statement

Heart Failure (HF) is one of the Joint Commission’s (an organization that accredits and certifies nearly 21,000 health care institutions in the United States) core measures. Core measures are set of care standards dictated by The Joint Commission and CMS to improve care delivery and patient outcomes in health care organizations. Given the increasing number of HF patients in United States, studies have shown that it is one of the costliest diseases covered by Medicare. An increased hospital readmission rate of these patients is costly to the overall health care system. Most of these patients are readmitted to the hospital in less than 30 days because of poor management of their

disease. Many organizations have proven data that shows they are providing effective education to admitted HF patients. However, it is very difficult to prove that patients understand the education received from health care providers, and patients with cognitive impairment are at a higher risk for poor health outcomes. Cognitive deficits in HF patients often impact their ability to care for themselves and effectively control their symptoms. As such, it is frequently common to see high admission rates for these patient populations in hospitals (Cameron et al., 2010). The organization where I conducted this research project has implemented a screening process for assessing these patients' cognitive status as a contributive factor to the increased readmission rate. The mini cognitive screening was used by nurses to identify patients with cognitive impairment. Once patients had been screened, their care plans were individualized based on their results, and resources were allocated towards the management of their disease process with the goal of reducing readmission rates. The aim of this project was to know if there was a reduction in HF readmission after patients were screened for cognitive impairment and have personalized care plans based on their needs.

Purpose Statement

Zambroski (2003) asserts that HF is increasing in prevalence and will continue to be a factor in the aging population. Therefore, it is important to explore the experiences of people who have been diagnosed with HF and to gain their perspectives about how they live and manage the disease on a daily basis. Many hospitals have created multidisciplinary programs to reduce readmission rates and improve the quality of life in patients living with heart failure. However, many of these programs geared towards

disease and symptom management have not proven to be comprehensive enough that they could be generalized to other hospitals working on the same issue. The Robert Wood Johnson Foundation has outlined an ideal plan for transitioning HF patients from hospital to the home environment that significantly reduced 30-day readmission rates (Nielsen et al., 2008). The foundation's recommendations include enhanced admission assessments, enhanced teaching and learning, and post-acute-care follow-up. In the study by Nielsen et al. (2008), post-acute care follow-up involved home care or physician visits, follow-up within 48 hours, and primary care clinic appointment within 5 days. The main reason for assessing a patient's cognitive status is the fact that the patient's care plan is individualized based on their cognitive needs and may ultimately reduce readmission rates. The hope is that an effective screening process utilizing the mini-cognitive-screening tool will lead to early identification of these patients, and that the allocation of resources based on patient's cognitive status will impact readmission rates.

Significance/Relevance to Practice

There is no doubt that heart failure continues to be on the rise and the increase in this patient population is costing the health care system more and more dollars each year. There is plenty of literature that supports and promotes health for HF patients with a goal of managing the disease, which is untreatable. There are many educational programs and resources available to this population. Despite all the efforts, there is still a growing number of patients diagnosed with HF and the admission rate of these patients is on the rise. One reason this is an important issue is because it impacts the federal government's policies on health care. Section 3025 of the Affordable Care Act added section 1886(q) to

the Social Security Act, stating that organizations without a Hospital Readmission Reduction Program were negatively impacted because the Centers for Medicare & Medicaid Services (CMS) were required to reduce payments to IPPS hospitals with excessive readmissions for discharges beginning on October 1, 2012. This program was designed to offer incentives for hospitals to take an active role in implementing strategies to reduce the number of unnecessary hospital readmissions. Currently about 20% of Medicare patients are readmitted to hospitals within 30 days after they have been discharged. The CMS considers this number excessive and believe that readmissions are an indicator of the lack of quality care in health care organizations (Centers for Medicare & Medicaid Services, 2012). The organization (study site) is implementing a different screening method for HF patient's cognitive status with a goal to individualize each patient's care plan and reduce readmission rates. More investment is being made on improving educational and treatment alternatives for HF patients. It is very important to understand patients' cognitive status prior to creating a care plan for them and to educate them on their disease management.

Project Question

This was a quality initiative/improvement (QI) project that I designed to analyze the effectiveness of cognitive screening utilizing secondary data. The project question was: How effective is cognitive screening for HF patients in reducing readmission rates?

Evidence-Based Significance of the Project

According to the American Heart Association Statistics Committee and the American Stroke Association (2008), the complications that led to an increase in the

number of deaths in HF patients in 1994 (284,087) was not significantly different from death rates of HF patients in 2004 (284,365). However, by 2005, 5.3 million cases of HF were reported in adults age 20 and older. Zambroski (2003) asserted that HF is increasing in prevalence and will continue to be a factor in the aging population. The main avenue for managing this disease is patients' understanding of the disease process including medication management and life style changes. Evidence-based guidelines for medication management of HF patients have proven to "saves lives, improves patient quality of life, prevents hospitalizations and reduces medical costs" (Wakefield, Boren, & Conn. 2013). One characteristic of HF is the frequent admission rates of these patients in hospitals, especially older adults. It is important to improve care of this population and reduce their readmission rates in the hospitals. For example, a study of a cohort of 9000 newly diagnosed HF patients followed them in a hospital in Ontario Canada. The researchers noted that the median survival was 2.4 years, with a 1-year mortality rate of 33.1%, and a 5-year rate of 68% (Harkness, Heckman, & McKelvie. 2012). In developed countries, HF is particularly costly to the health care system; it accounts for anywhere between 1.1 to 1.9% of all health care spending (Harkness et al., 2012).

Implications for Social Change in Practice

The inconsistencies in how patients with HF comply with their treatment regimen have perplexed many health care providers. The prevalence of heart disease in the United States is an important reason why communities should allocate resources to practical self-management interventions to improve compliance to treatment and sustain lifestyle changes. This disease is very common older adults, and as older adults continues to live

longer in United States, the rate of HF also increases. According to the American Heart Association statistical update, “The estimated direct and indirect cost of HF in the United States for 2008 is \$34.8 billion. In 2003, \$4.4 billion (\$6577 per discharge) was paid to Medicare beneficiaries for HF” (Rosamond et al., 2007, p. e87). In living with a chronic illness such as HF the focus becomes self-care management and coping to sustain a healthy lifestyle and improve the quality of life. Rodriguez and Marelli (2014) stated that more and more people are being diagnosed with heart failure. Many of the cases are congenital heart issues that are showing up later in life. Dardiotis et al. (2012) added that HF is associated with cognitive impairment, which could negatively affect a patient's abilities to carry out self-care creating “dependence and increased disability, known predictors of raised mortality and increased readmission rates” (p. 5). The number of HF patients readmitted to the hospital within 30 days of discharge can be significantly reduced if the patients’ care plans and education materials are individualized based on their cognitive status. Most often, patients can be provided additional resources such as home health care and pharmacy outreach programs based on the findings of their cognitive assessments.

Definitions of Terms

The following terms will be used and defined as follow:

Cognitive: An adjective that describes the intellectual function required to manage day to day living such as remembering, knowing, planning and thinking.

Heart failure: A chronic disease characterized by the heart not being able to pump blood at the rate required by the demand of the body (Zipos, Libby, Bonow, & Braunwald, (2005).

Mild cognitive impairment: A cognitive deficit that makes one activity of daily living more difficult than the other. An example is not being able to organize medications while still being able to conduct most of the activity of daily living (Harkness et al., 2012).

Plan of care (care plan): A plan that is individualized for patient care and welfare based on their diagnosis. It is formulated after a patient's assessment and with input from patient. (Cameron et al., 2010).

Self-care management: These are behaviors that enhance patients' decision-making capabilities related to their health symptoms and maintenance.

Assumptions and Limitations

This section addressed the assumptions and limitations of the quality improvement project. The collaboration between patients and the nursing staff plays an important role in patients' willingness to participate in the mini cognitive screening test. The nurse's attitude and bias might have influenced the final results of the patients' scores. Some HF patients may have refused to take the cognitive screening because they were concerned of one more diagnosis added to their list of medical problems. Even though all patients diagnosed with HF are expected to be screened, there are certain criteria that may have automatically placed the patient as already having a cognitive problem without a thorough assessment. Some nurses may have interacted with patients

with limited English language proficiency and assumed that the patients were incompetent because of the language barrier. These types of biases may have affected the total number of patients that were actually screened for cognitive impairment. These biases may have limited my capacity to evaluate the effectiveness of the cognitive screening related to reducing readmission rate for this patient population.

The impact of the screenings was not immediate; I had to compare data for more than six months to see if there was a reduction of readmission rate of patients with HF after the implementation of cognitive screening on the unit at my study site. Also, because some HF patients were occasionally admitted to other units based on the hospital census, those patients could not be accounted for because they were not screened for cognitive impairment. In some cases, patients with mild cognitive impairment may have passed the mini cognitive screening, and there was no process in place for these patients to be rescreened in the future as their cognitive impairment deteriorated. A further limitation was the fact that the screening was done only on patients with English proficiency. Patients with language barriers were not taken in to consideration for this project as there was limited access to interpreters. The HF population has been continuously increasing, especially as elderly populations are living longer. Thus there will be an increasing demand for the health care system and professionals to provide care to this complex, vulnerable population.

Summary

This section has shown the increased prevalence of patients diagnosed with HF and the cost of HF to the health care system. Health care organizations are aware of this

cost and are aggressively treating and educating these patients on their disease process and management. Patient education will only be effective if the patients are able to understand the information or are giving the right resources to assist them in their care. Thus, patients' cognitive status is a necessary consideration. The assumption is that, if patients are screening for their cognitive impairment prior to education and management of their disease, then they will be provided individualized care plans that will be based on their screening results, and resources will be made available to them based on their needs. If this is done effectively, patients will be able to manage their disease and reduce their rate of readmission to the hospitals.

Section 2: Review of Literature and Theoretical and Conceptual Framework

Introduction

Adherence to treatment plans, especially medication regimens, in HF patients has been a continuous struggle in the health care industries. Gerard (2012) stated that “it may be possible to improve adherence to medication in patients with CHF by using a range of strategies; however, the specification of effective techniques requires greater clarity in this literature” (p. 132). At present, there is inadequate high-quality proof of the efficiency and effectiveness of interventions to promote patient adherence to treatment plans including medication in classic HF patients. Some researchers have recommended further studies to recognize optimal strategies for implementation into clinical practice to improve HF patient’s adherence to treatment plan and to reduce readmissions rate of this patient population in to the hospital.

Review of Scholarly Evidence

Presently, there is no standardized process for HF patients to be screened for cognitive impairment as part of the patient’s care. Most often, HF patients have other chronic illnesses that impact their overall health. HF is one of the leading causes of hospitalization in United States. Gure et al. (2012) stated that there is evidence that “cognitive impairment including dementia and mild cognitive impairment (MCI), is associated with cerebrovascular and cardiovascular disease and is linked to HF” (p. 1724). The standardization of assessment of cognitive impairment for HF patients would be beneficial to patient care and would improve their care plans if health care systems were to base screening on the findings of this and similar studies.

Specific Literature

Health care clinicians struggle with the fact that HF patients with chronic diseases continue to have higher 90-day readmission rates, even though scientists have proven the etiology and treatment of the disease (Bauer & Pozehl, 2009). Knowing the etiology and the treatment of one's disease thus does not always equate to adherence to the treatment plan. Many research studies have noted that lack of disease management has been the proven reason for this increased rate of readmission. So much research has been done to reduce readmission rates by using successful interventions, but healthcare systems continue to see increased readmission rates at the conclusion of each research intervention (Naylor, Stephens, Bowles, & Bixby, 2005). Researchers are now associating the increase in readmission rates of HF patients with cognitive impairment, given that 28% to 58% of patient diagnosed with HF have some related diagnosis of mild to severe impairment to one or more cognitive spheres (Pressler, 2008).

General Literature

HF affects millions of Americans and is the most common reason for hospital admissions among the elderly, accounting for over one million admissions and costing \$20 billion per year (Mueller, Vuckovic, Knox, & Williams, 2002). HF consumes plentiful health care resources, is the foremost complication of heart disease, and is associated with high incidence of early and frequent hospitalization. The key clinical problems leading to preventable hospitalizations are the lack of adequate patient and family education, poor self-assessment skills, inadequate support systems, the failure to seek medical attention promptly when symptoms reoccur, and noncompliance with diet

and medication protocols (Artinian, Magnan, Sloan, & Lange, 2002). In addition, HF accounts for over 1,084,000 hospitalizations annually, and is nearing \$34.8 billion in health care costs (Britz & Dunn, 2011). One of the goals for Healthy People 2020, a U.S. Department of Health and Human Services program to promote national health, is to improve cardiovascular health. This can be done by improving the quality of life of the cardiovascular patient through preventive measure to reduce risk factors. The risk factors can be reduced through early detection and treatment of underlying risk factors leading to HF, accompanied with patient's education.

Conceptual Models and Theoretical Framework

One way to reduce hospitalizations and encourage positive health outcomes in heart failure patients is to make sure that the amount and quality of self-care used is suitable for individual patient's conditions (Artinian et al., 2002). Patients' cognitive status and understanding of the disease process is the key in managing their disease. The self-care deficit theory of nursing is a general theory, applicable across all nursing practice areas and situations in which people require nursing care (Orem, 2001). According to Sitzman & Eichelberger (2011), "Orem's self-care model describes a structure wherein the nurse assists the client, where needed, to maintain an adequate level of self-care. The degree of nursing care and intervention depend on the degree to which the client is able or unable to meet self-care needs" (p. 96). Per the self-care deficit theory of nursing, the focus on human beings is what distinguishes nursing from other human services (Orem, 2001). It follows that the role of nursing in society is to assist individuals' development and exercise of their self-care abilities to the extent that people

can adequately and completely provide for their self-care requirements (Woods & Isenberg, 2001). According to the theory, individuals who cannot adequately provide for their self-care requirements are experiencing a self-care deficit, and it is this deficit that identifies individuals in need of nursing care. The theory's purpose is to describe when and why nursing is needed (Woods & Isenberg, 2001). First, patients need to take care of themselves in areas such as health and daily habits with food, exercise, medications and more. Second, they need nursing interventions if they cannot care for themselves and handle medication management. Third, they need to have relationships with the interdisciplinary teams such as pharmacy outreach programs and rehabilitation programs. Orem's theory is broken in to three parts which can address the above-mentioned relationships in providing nursing care to HF patients. These include (a) the theory of self-care, which describes why and how people care for themselves; (b) the theory of self-care deficit, which explains why people require nursing; and (c) the theory of nursing systems, which describes relationships that must be adopted and sustained for effective nursing care (Fawcett, 2000; Orem, 2001; see Figure 1).

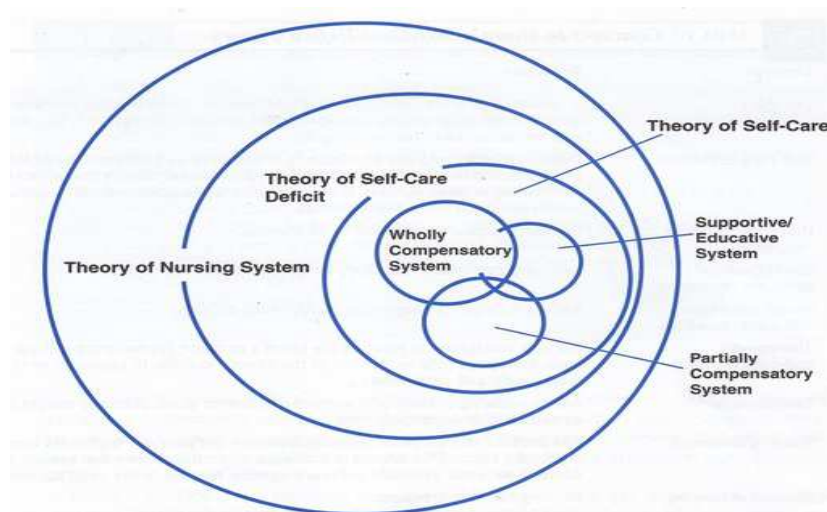


Figure 1. Self-care deficit nursing theory. Adapted from *Nursing: Concepts and Practice* (6th ed.) by D. E. Orem. Copyright 2001 by Mosby.

Orem's self-care theory (2001) validates the need for nursing in a patient who does not have the ability to continually maintain the quality of self-care. These patients require therapeutic assistance in maintaining self-care during an illness or when recovering from a disease or coping with lifestyle changes.

Orem's self-care deficit theory asserts that when patients have adequate knowledge of their disease process, they will be in better positions to carry out self-care behaviors that are essential for health maintenance. Supportive education by health care providers promotes knowledge and confidence in patients to manage their diseases and keep up with the basic standards needed to maintain health. HF is a disease of life style changes and it is important for a patient to understand the disease process and management to successfully stay out of the hospital. Cognitive screening of the patient can guide the health care provider to allocate education and resources to the patient based on their screening results. HF patients have to be able to meet the required standards to

manage their disease conditions as self-care requisites. This includes but is not limited to the patient's ability to:

1. Seek out and acquiring applicable medical assistance needed to manage their disease.
2. Understand and identify effects and results of the pathologic conditions and states of their disease.
3. Effectively participate in the recommended therapeutic and rehabilitative prescriptive measures required to manage their disease.
4. Adapt and adjust the self-care concept in accommodating oneself as being in a state of wellness that needs lifestyle changes specific to managing and living with the disease.
5. Know about the pathologic condition of the disease, and the advantages and disadvantages of treatment options in stated lifestyle changes that promote healthy living and personal development in dealing with HF disease.

Strengths of Orem's Theoretical Framework

A most important strength of Orem's theory (2001) is the fact that both beginning and advanced practitioners can easily apply it to their everyday patients. Orem use of terms like "self-care," "nursing systems," and "self-care deficit" can easily be understood by most health professionals including students, and can be applied to different patient populations, especially those with chronic illnesses like HF. Orem clearly defines the need of nursing care when patients can no longer provide themselves the care they need

to manage their disease to sustain health life and health, recover, and cope with the effect of their diseases as needed in their activities of daily living.

Weaknesses of Orem's Theoretical Framework

Even though many may view Orem's theory (2001) as simple, its complexity is marked by its multiple uses of the term self-care. For example terms such as self-care agency, self-care demand, self-care deficit, self-care requisites, and universal self-care, can be mystifying to many readers. In addition, Orem's theory does not take in to account the mental state of the patient and does not acknowledge patients' emotional needs, which in the case of HF patients is quite consequential to managing their disease process.

Summary

This section outlined the fact that in spite of HF being one of the leading causes of hospitalization in the United States, not many organizations have hardwired a consistent process to reduce readmission rates in this population. The literature shows that even though many studies have focused on the etiology of the disease and standardized treatment plans, satisfactory compliance rates among this patient population have not been achieved. Gaps exist in the education of patients and their adherence to the treatment plans designed by their health care providers. Orem's theory (2001) emphasizes the concepts of (a) self-care, which describes why and how people are motivated to care for themselves; (b) self-care deficit, which explains why people require nursing; and (c) the theory of nursing systems, which describes relationships between health care providers individualized nursing care. As health care providers promote self-care for HF

patients, it is imperative to discern whether patients' non-compliance is due to behavioral issues or an underlying cognitive impairment.

Section 3: Methodology

Introduction

I designed this descriptive correlational study to address my primary research question. This study “examine[d] the relationships that exist in a situation” (Burns & Grove, 2009), and focused on the relationship within variables because variables that have occurred in the past often continue to occur. In this design, the situation cannot be controlled or manipulated, and it provides the groundwork for further research (Burns & Grove, 2009). That is, descriptive correlational data can further be analyzed in a similar analytic study “concerned with the determinants of the disease [and] the reasons for relatively high or low frequency of disease in a specific population subgroup” (Kelly, 2011). I conducted all data collection only after the Walden University Institutional Review Board approved this project on June 2, 2015.

Project Design/Methods

The relationship between HF patient cognitive screening results and their readmission rate in the hospital can clearly be expressed using a descriptive correlational design. Friis and Sellers (2009) stated that this design can be used to evaluate trends, identify emerging problems, inform planning, and identify areas for further study. To better understand the relationship between cognitive impairment in HF patients and increased readmission rates, my study site developed a program.

My study site planned and trained a core group of nurses and gave them the title of “Heart Failure Champion Nurses.” These nurses were expected to round on all HF

patients admitted to the hospital. Upon admission of a HF patient, the HF champion nurse assessed the patient's cognitive status. The main goal of doing the cognitive assessment of the HF patient population is make early identification of the presence of impaired cognitive function. This is relevant in order to prepare an educational and treatment plan appropriate to the patient's cognitive function. It is evident that unobserved and undetected cognitive impairment is related to increased mortality and morbidity rates in patients with chronic diseases (Zambroski, 2003).

The heart failure RN used the mini-cognitive (mini-cog) assessment tool. The mini-cog tool is an evidence-based practice nursing tool for screening and monitoring cognitive functions. The RN cannot make any diagnosis based on this tool. Borson, Scanlan, Watanabe, Tu, & Lessig (2006) inferred that the Mini-Cog is appropriate for use in all health care settings. It is appropriate to be used with older adults at various heterogeneous language, culture, and literacy levels. All HF patients at the study site were screened for cognitive impairment except in cases when the patient already had a history of some sort of cognitive impairment diagnosis (e.g. dementia). In those cases, the RN requested a full cognitive assessment to be completed by an occupational therapist if the patient failed the Mini-Cog assessment.

Population and Sampling

The population and sample for my study were all patients with primary diagnosis of HF admitted to the telemetry unit. All of these patients received HF education as part of their care plans. The HF nurses screened all of these patients for their cognitive status. Occasionally, patients' family members were screened if they agreed, on condition that

they were responsible for managing the patient's health at home. This often occurred in cases where the patient was deemed disoriented or had other health conditions that had already affected their cognitive status. I did not record the screening results of these family members in the data because I pulled the data from the computerized system on a work bench report created by the information technology department, which pulled only patients with primary diagnosis of HF.

Data Collection

All diagnosed HF patients' information was automatically pulled into a new HF work bench data flow sheet. The HF champion RN retrieved this work bench report that indicated whether the patients had been screened. This report was also useful to me because it indicated what education patients had received, possible discharge dates, and referral services, if any. The care management team comprised of social workers and case managers offered to help me in the data collection process. Presently the case managers in the social service department of my study site generally track all readmitted HF patients. Table 1 shows HF patients admitted to S8 from July 2014 to December 2014. The table also shows the number of patients and percentage of patients readmitted within 30 days and patients who were not readmitted within 30 days. All patients on S8 had individualized care plans. I electronically compared the list of HF patient admitted within 60 days to the HF workbench to see if there was a relationship between patients who were positive for cognitive impairment and readmission.

Since S8 was the only unit in the hospital where heart failure patients were being screened for cognitive impairment, the readmission rates on S8 had to be compared with the readmission rates of HF patients who were seen on other units within the hospital. These HF patients on the other units were not screened for cognitive impairment. HF patients who were admitted to units other than S8 are presented in Table 2.

Table 1

South 8 Unit Patients Admitted/Readmitted with HF Diagnosis from July to December 2014

Months	S8 HF patients admitted	S8 HF patients not readmitted	Percentage of HF patients not readmitted	S8 HF patients readmitted within 30 days	Percentage of HF patient's not readmitted	Percentage of cognitive screen completed	S8 Patients with individualized care plans
Jul	29	25	86.29%	4	13.79%	100%	29
Aug	24	19	83.33%	5	16.67%	100%	24
Sep	30	25	86.67%	5	13.33%	100%	30
Oct	25	22	88%	3	12%	100%	25
Nov	23	19	82.61%	4	17.39%	100%	23
Dec	25	22	88%	3	12%	100%	25

Table 1 also shows the number of patients readmitted within 30 days and the number of patients that were not readmitted within 30 days. All patients admitted to other units of the hospital had individualized care plans which outlined the standard of care

provided. However, Table 2 also shows that HF patients admitted to other units did not receive screening for cognitive impairment.

Table 2

Hospital-wide Patients Admitted/Readmitted with Diagnosis of HF

Months	HF patients admitted to other units in Hospital	HF patients not readmitted within 30 days	Percentage of HF patients not readmitted within 30 days	HF patients readmitted within 30 days	Percentage of HF patients readmitted within 30 days	HF patients not screened for cognitive impairment	HF patients with individualized care plans
Jul	16	12	75%	4	25%	0	16
Aug	18	15	83.33%	3	16.67%	0	18
Sep	14	9	64.3%	5	35.7%	0	14
Oct	17	13	76.47%	4	23.53%	0	17
Nov	16	15	93.75%	1	6.25%	0	16
Dec	31	24	77.42%	7	22.58%	0	31

Data Analysis

The final data analysis I conducted was a retrospective and perspective study to evaluate the effectiveness of cognitive screening on HF patients and its impact on reducing the 30-day HF readmission rate, which is the hospital's standard metric. I captured specific data using the workbench report which reflects all patients screened for cognitive impairment. At the end, I performed comprehensive data analysis comparing

the percentage of patients admitted with HF diagnosis in South 8 who had cognitive screening to the percentage of patients admitted in other areas of the hospital that did not have cognitive screening. I calculated the z statistics and M scores and compared them with the hospital's baseline 30-day readmission rates. I then used the z (readmission rates) and M statistics to determine whether cognitive screening in HF patients had an impact on the 30-day readmission rates. I examined overall comparability between the hospital's 30-day readmission rate and the HF patients that received cognitive screening using a chi-square test for independence and indices of agreement and reliability; this analysis excluded HF patients that were not screened for cognitive impairment. My goal was to analyze the data and see if the cognitive screening had any positive impact on reducing readmission rate of HF patients.

Statistical Analysis

I have presented the data as expected value statistics (frequency) for patients screened for cognitive impairment versus patients not screened for cognitive impairment. I manually extracted patient data using Horizon Business Insight with specific metrics to include data on inpatient admits within 30 days, qualified as inpatient service cardiovascular and initial discharge date, year and months between June 2014 and December 2014. I excluded patient identifiers of medical record numbers to maintain patients' rights and privacy related to the requirements of the IRB. I also excluded patient demographics such as age, gender, and the New York Heart Association (NYHA) heart failure classifications system because all patients on S8 received cognitive screening regardless of age, gender, or stage of heart failure. Further, I excluded the patients'

average length of stay and the readmission diagnosis for the purpose of this analysis. I obtained the readmission rates for all patients during the 6-month period using the electronic medical database, thus attrition was not a consideration. I examined the data set for the presence of missing data, skewedness and outliers, and use chi-square tests to analyze univariate associations between categorical variables. A p value of <0.05 was considered statistically significant.

Project Evaluation Plan

The project focus was on screening HF failure patients' cognitive status with a goal of reducing readmission rates. In designing the program, I considered it important that the input was not only obtained from the entire team involved with HF patients' care, but also the patient. The HF steering committee which is made up of members from multiple interdisciplinary teams involved in HF patients care during hospitalization finalizes the program design. The program cannot be finalized without an inside perspective of those suffering from the disease. Not understanding the patient's perspective of the disease has been "identified as a significant barrier to the receipt of health care services and is increasingly recognized as a problem that impacts health care quality and costs" (Joynt, Oray & Jha. 2011). To successfully reach the target population, outreach programs for all populations of HF patients must take into consideration the perspectives of representatives from the HF patient population.

The organization (study site) has several committees that review quality improvement projects and offer feedback. The different committees include, Unit Practice Councils which meet monthly to discuss opportunities for improvements on

specific projects. The HF Steering Committee meets biweekly and evaluates the feedback from staff and patients and make changes if needed. The Unit Charge Nurse Group ensures that specific initiatives are carried out well. This project was validated by all the committees.

Summary

The data collection process focused on HF patients on the S8 unit, and HF patients admitted to other areas of the St. Paul, MN area hospital that served as my study site. The period of investigation was June to December, 2014. The 30-day all-cause readmission served as a data point for comparing rates of readmission in patients with a primary diagnosis on HF on S8 to patients on other units that did not get the cognitive screening protocol used on S8. To protect the rights of patients, I did not use personal identification information. I also did not use the New York Heart Association (NYHA) Classification System so that all patients on S8 had the benefits of cognitive screening regardless of the severity of their illnesses. I also excluded the patients' average length of stay and the readmission diagnosis for the purpose of this analysis. I used chi-square tests were used to analyze univariate associations between categorical variables. A p value of <0.05 was considered statistically significant.

Section 4: Findings, Discussion, and Implications

Introduction

In this study I compared the readmission rates of patients receiving cognitive screening and tailored education and plans of care designed to reduce readmission with the readmission rates of patients who were not screened for cognitive impairment and received the standard of care in a metro area hospital in St. Paul, MN. HF patients frequently experience cognitive decline which could impact how they process education given by health care staff and ultimately their abilities to care for themselves. Cardiac rehabilitation, fitness and healthy lifestyles have often been associated with improved cognitive functioning. If there is a strong correlation between cognitive screening and reduction in readmission rates, hospitals can focus their resources in ensuring that all patients receive the specific interventions to improve the quality of how care is provided to patients.

Findings

Of the 268 patients I reviewed, 156 were seen on S8, which is the primary cardiac unit for patients with HF. All the patients on S8 for the 6 months of retrospective data I reviewed were screened for cognitive impairment. HF patients seen on units other than S8 (including medical surgical units) totaled 112, none of whom were screened for cognitive impairment. There were 24 patients readmitted to S8, and 24 readmitted who were seen on other units in the hospital. The expected value in this sample for the patients who were screened on S8 was 28, and the patients on other units who were not screened 20. South 8 was the primary unit for HF patients.

The initial focus of this quality improvement project was that cognitive screening as an independent variable may impact the dependent variable of readmission rates of HF patients on S8 as compared to HF patients admitted to other units in the hospital. The patients on other units that did not receive cognitive screening received standard care. During the project improvement, other independent variables such as education on disease process, implementation of individualized care plans and the allocation of specific resources appeared to have also impacted the dependent variable of readmission rates in HF patients.

In the chi-square test statistic, where H_0 assumes that there is no association between patients with cognitive screening and reduced readmission rate, and H_1 assumes that there is an association between cognitive screening and reduced readmission rates, the significance level of the variables is $\alpha=0.05$. The p value = 0.196, which is greater than the significance level. Hence, the null hypothesis holds true that cognitive screening of patients is not associated with reduced readmission rates in the data analyzed. Table 3 shows the total number of HF patients readmitted to S8 who were screen for cognitive impairment and the total number of HF patients readmitted to other areas of the hospital that were not screened for cognitive impairment.

Table 3

Frequency of Total Number of HF Patients Seen and Readmitted on S8 and Other Units

	PATIENTS SCREENED FOR COGNITIVE IMPAIRMENT ON S8	PATIENTS NOT SCREENED FOR COGNITIVE IMPAIRMENT- (OTHER UNITS)	TOTALS
NUMBER OF PATIENTS READMITTED	24	24	48
NUMBER OF PATIENTS NOT READMITTED	132	88	220
TOTALS	156	112	268

Notes. Expected values $E = (\text{Row Total}) (\text{Column Total})$

Grand Total

$$= (156)(48) = 27.94 \approx 28$$

268

$$= (112)(48) = 20.06 \approx 20$$

268

$$= (156)(220) = 128.1$$

268

$$= (112)(220) = 91.94$$

268

Table 4 shows the total expected values of patients screened for cognitive impairment on S8 and patients not screened for cognitive impairments on other units in the hospital, and includes the total number of patients not readmitted for each.

Table 4

Table of Expected Values

	PATIENTS SCREENED FOR COGNITIVE IMPAIRMENT ON S8	PATIENTS NOT SCREENED FOR COGNITIVE IMPAIRMENT- (OTHER UNITS)
NUMBER OF PATIENTS READMITTED	28	20
NUMBER OF PATIENTS NOT READMITTED	128	92

Notes. Ho PCS is not associated with reduced readmission

H1 PCS is associated with reduced readmission

$$X^2 = \sum (O-E)^2$$

E= Expected values

E

O= Observed values

$$X^2 = (24-28)^2 + (24-20)^2 + (132-128)^2 + (88-92)^2$$

28

20

128

92

$$= 0.57 + 0.8 + 0.125 + 0.174$$

$$X^2 = 1.669$$

Significant level (α)

$$\alpha = 0.05$$

$$\text{Degree of freedom} = (r-1)(c-1)$$

$$= (2-1)(2-1)$$

$$\text{Critical value} = 1$$

$$\chi^2_{0.05, 1} = 3.841$$

$$\text{P-value (CHIDST)} (1.669, 1)$$

$$P \text{ value} = 0.196$$

The p value = 0.196, which is greater than the significance level. Hence the null hypothesis holds true that cognitive screening of patients is not associated with reduced readmission rates in the data analyzed.

Discussion of Findings

The mini cognitive screening tool was used in place of the full cognitive screening tool for all HF patients on the S8 unit at my study site. The less extensive mini-cog tool excludes patients with true cognitive impairment on the one hand, but on the other hand, includes patients that have temporary impairment related to electrolyte imbalance. The screening tool was only available in English, so patients who spoke other languages such as Spanish, Hmong, Arabic, or Oromo were not specifically called out on the total number of patients on S8 that were screened for cognitive impairment. The sample sizes of 156 patients who were screened for cognitive impairment and 112 patients not screened for cognitive impairment is too small to draw an inference as to whether this project could be replicated. The individualized care plans incorporated for the patients who received cognitive screening were impacted by other factors and other

co-morbidities, as determined by the individual providers. Further study is needed to replicate the findings of this study to determine whether cognitive screening with personalized care plans impacts the rate of readmission in heart failure patients.

Project Implications

As organizations race for a solution to reduce readmission rates and avoid reimbursement penalties from the Centers for Medicare & Medicaid Services, there is still no single study or program that can claim to have found a solution to the problem. HF readmission poses significant problems for health care organizations including decreased quality of life, increased cost, and increased utilization of resources (Hobbs, Roalfe, Davis, Davies & Hare, 2002; Lloyd-Jones, Adams, & Brown, 2010). In spite of the limitations, this quality improvement project has revealed important implications regarding how heart failure patients can be screened and offered customized plans of care to meet their individual needs. Cognitive screening alone does not significantly reduce readmission rates of those with HF. This project reveals that there are multiple factors that impact readmission rates in HF patients. Therefore, in planning strategies and interventions to minimize readmission of HF patients, other confounding factors have to be taken into consideration. Having interventions such as scales given to patients, enrollment in a medication management therapy programs, heart failure support groups, and other personalized plans geared towards specific patients may not only reduce their length of stay in the hospitals, but also increase the number of days they can safely manage their disease process in less acute care settings. Thus, minimizing the rate of readmission in hospitals within 30 days of discharge is an issue that will continue to take

center stage in the care of HF patients. Further study is required to provide insight on which specific interventions are likely to influence the readmission rates of HF patients.

Project Strengths and Limitations

This quality improvement project had strengths and limitations related to the number of patient records that I reviewed and how I processed the data for meaningful inferences that might impact how education is performed for patients with cognitive impairment. A major strength of this project is that staff at my study site received extensive training in screening patients for cognitive impairment, which was not a previous focus in their roles as staff RNs and cardiac rehabilitation aides. The second benefit of this project is that patients who failed the cognitive screening assessment were connected with the appropriate resources to ensure that they received equitable care in the management of their disease process. Lastly, another strength of this project was that the use of workbench reports specifically developed to meet the criteria of the project gave me the ability to access pertinent patient data electronically without identifying the patient.

This quality improvement project also had limitations. Since I used workbench reports were collect data on the number of patients that received cognitive screening on S8, the data was dependent on the accuracy and completeness of the clinical documentation of the staff. The project also had a small sample size that could have impacted the significance of the results. HF patients on S8 were screened for cognitive impairment while other HF patients admitted to different areas of the hospital received “usual care.” Inasmuch as “usual care” can be defined as standard care per an

organization's policies, the fact that specific plans of care were not designed to meet these patients' needs may have placed them at a higher risk of being readmitted to the hospital within 30 days of discharge. The nurses and cardiac rehabilitation aides who performed the screenings may also have attitudes or biases that could have impacted the objectivity of the screening tool. Patients with a high classification of heart failure based on the New York Heart Association (NYHA) would have a higher chance of readmission based on the severity of their disease and other co-morbidities they were dealing with at the time of admission. Language barrier also played a role in how HF patients were screened on S8, as the tool was only available in English. Patients with limited English proficiency were excluded from the screening for cognitive impairment. The findings of this project can be summarized in the theoretical model depicted below. Figure 2 illustrates a conceptual model that I created based on key concepts gleaned from this quality improvement project. I have developed this model to reinforce the findings that cognitive screening alone may not directly influence the trajectory of readmission rates in HF patients. However, if a comprehensive approach that takes into account other factors such as individualized care plans, medication management programs, environmental safety, cardiac rehabilitation support, complex disease management programs, and community support groups, then the patient's self-care will be enhanced.

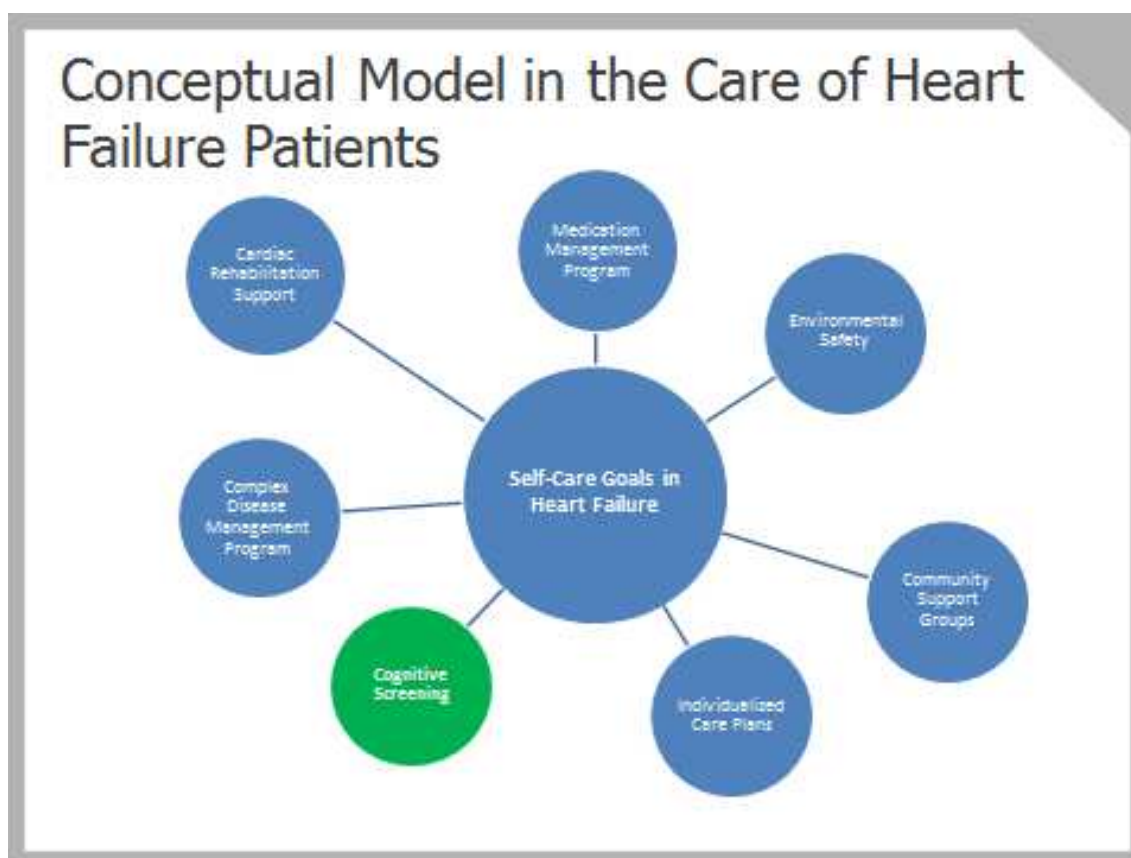


Figure 2. Comfort's conceptual model in the care of heart failure patients.

Summary

It is important to make sure a quality improvement project is backed up by evidenced-based research. The project design, evaluation, and analysis of the data are crucial in the results of the project. Assessing the barriers faced in the project and implementing solutions to the problem is a fundamental piece in quality initiative projects. Using a computerized workbench report was helpful in reducing human errors in this quality improvement project, and was also effective because data was automatically pulled electronically on all patients admitted with HF. Having the other interdisciplinary teams involved in patient care and understanding their role in the research project was very important to the success of the project.

Section 5: Scholarly Product

Introduction

Health care organizations continue to aggressively work to collect data regarding processes related to readmission rates in HF patients. Unplanned readmissions within 30 days after discharge amounts to about “\$20 billion each year in the United States and Canada. Heart failure is one of the most common reasons for readmission to hospital and is associated with a high risk of readmission” (McAlister et al., 2013, p. 2). The education of patients based on their cognitive status has a role in how patients can interpret and use the education to promote self-care which will inevitably have an impact on their rate of readmission in hospitals. Cognitive screening prior to education with the individualized care plans may have an impact on patients’ responses if it is not considered the sole factor that determines 30-day readmission rates in acute care settings. Effective screening of patients coupled with the use of appropriate resources can impact the rate of readmission to the hospitals within 30 days.

Project Dissemination

A fundamental purpose of the scholarly project is to disseminate knowledge that could impact how care is provided. This project meets the criteria of nursing scholarship, which is a process of both inquiry and creativity that systematically promotes teaching, research, nursing education and practice. Effectively disseminating projects through scholarly activities enables nurses to implement and sustain evidence-based changes in health care (American Association of Colleges of Nursing, 2012; Melnyk & Fineout-Overholt, 2005).

I have disseminated this project to groups of multidisciplinary professionals working on quality improvement in the study site including the Heart Failure Steering Committee, Unit Practice Councils (UPCs), Quality Practice and Education Committee, Cardiovascular Leadership Committee, and Cardiac Rehabilitation Team. I disseminated this information using a PowerPoint presentation and poster board. The advantages of this mode of communication was that the audience was interactive and offered feedback on strengths, assumptions, and limitations of the quality improvement project. Having the poster boards in different departments at various periods of times was vital in the reinforcement of knowledge.

After graduation, I plan to partner with the Cardiology Department to explore a more in-depth project to enhance the types of services that may be used for HF patients to reduce 30-day readmission rates. These interventions may include:

- Scales program (part of the complex disease management program). Free scales for patients who do not have one.
- Medication Boot Camp.
- Complex disease management programs offered biweekly.
- Cardiac appointments within 1 week of discharge.
- Community paramedic program. This is a new program in conjunction with the city paramedics, who will perform home visits to high-risk readmission HF patients.
- Simplified/revised HF booklet to be given to all HF patients on admission.
- Refrigerator magnet on stages of HF disease and need for medical attention.

- Closed circuit HF education for all cardiac nurses and cardiac rehab technicians.
- Outpatient cardiac rehab to assess all cardiac patients during hospital stay.
- Home health aide/nurse as needed to assist patient in daily activities of living.

In all aspects, one could conclude that there is risk associated managing the care of HF patients transitioned from hospital back to their community. However, I am hopeful that this project has served as a starting point for future quality improvement projects that will affect how patients with HF are screened for cognitive impairment and how resources can be allocated to them appropriately.

Summary

The traditional method of disseminating research and scholarly projects through professional journals and academic publishers is becoming less popular as technological advances in online journals and other social media venues become the preferred channel for the dissemination of professional practice knowledge. More open access to knowledge through online servers makes it easier to share knowledge among interdisciplinary teams or with anyone who has Internet access. I disseminated the findings from this quality improvement project via PowerPoint slides and poster boards which were made available to the teams that were part of the screening of HF patients, and via poster boards that went to various units in the study site where HF patients were cared for. These methods of knowledge sharing gave the audience an opportunity to interact with me and offer feedback on the strengths, assumptions, and limitations of this project. I presented the project to several hospital committees who were strategically planning intervention that will positively impact the care of HF patients.

Conclusion

This quality improvement project examined the impact of using a cognitive screening tool to target educational needs and individualized care plan for patients with HF. In a six-month period, all the HF patients admitted to a single unit in a St. Paul, MN area hospital were screened for cognitive impairment. Patients who failed the mini cognitive screening received individualized plans of care to meet their needs. I compared the 30-day readmission rate for these patients to patients admitted to the same hospital within the same timeframe that received “usual care,” which is considered standard care.

The findings of the project revealed a p value = 0.196, which is greater than the significance level and which proved that cognitive screening of patients was not associated with reduced readmission rates in the data analyzed. However, given the project's strengths, implications, and limitations, this was a step in the right direction, as it revealed that cognitive screening alone may not reduce readmission rates in HF patients. Nevertheless, a more comprehensive approach in the care of HF patients that includes other factors such as a medication management program, environmental safety, cardiac rehabilitation support, a complex disease management program, and community support may impact how patients care for themselves, which in turn may keep them out of the hospitals and reduce 30-day readmission rates. Even though health care organizations are working to reduce readmission rates for reimbursement purposes, the paradigm shift will only occur when the focus becomes utilizing the appropriate resources to help patients with HF live to their fullest potential in their homes, away from hospitals and institutions.

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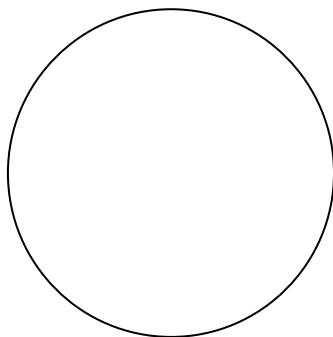
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Appendix A: Mini-Cognitive Screening Tool

MINI COGNITIVE SCREENING TOOL**Patient:** _____ **Assessed by:** _____**Date Completed:** _____

1. Instruct the patient to listen carefully to and remember the following three (3) words and then to repeat the words back to you. **TABLE, CAR and ORANGE**
2. Instruct the patient to draw the face of a clock using the patient's copy of mini-cognitive screen



After the patient puts the numbers on the clock face, ask him or her to draw the hands of the clock to read 9:10.

3. Ask the patient to repeat the 3 previously stated words.

SCORING

1. **Word recall score** _____

Give **1 point** for each recalled word after the Clock drawing test.

Patient recalling none of the three words = 0

Patient recalling all three words = 3

2. **Clock drawing Score** _____

Give 2 points for a normal clock drawing test with the hands and numbers in the right places, and 0 points for an abnormal clock drawing test.

3. Total test score _____

A score of 0–2 indicates positive screen cognitive impairment and 3–5 negative screens:

From Borson, S., Scanlan, J., Brush, M., Vitallano, P., & Dokmak, A. (2000). The Mini-Cog: A cognitive ‘vital signs’ measure for dementia screening in multi-lingual elderly.

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Appendix B: The Cognitive Assessment

The Cognitive Assessment

Complete initial assessment Data Tool in Epic,

1. Is patient alert and oriented?
2. What year is it now?
3. What month is it now?
4. Please repeat this phrase after me: John Brown 42 Market Street Chicago. (Have patient repeat until patient says it correctly) Instruct the patient to remember that name and address for a few minutes.
5. About what time is it without looking at the clock (within an hour)?
6. Say the months of the year in reverse order
7. Repeat the name and address I asked you to remember

General Questions

1. Patients age 18 and above with HF as primary or secondary admission diagnosis
2. Patients on more than 5 medications
3. Last admission date
4. Is English their primary Language?
5. What method does the patient use at home to organize their meds?
6. Does the patient organize their own meds?
7. If no who is responsible for doing this?
8. What is the patient's primary residence?
9. Lives at an assisted living facility and lacks help with medication set u

Appendix C: HF Cognitive Screening Report for Charge Nurses

Today's Date/Shift/Name of charge nurse	Name	New or Old CHF Diagnosis	Patient's Living Condition	Admission Date	Cognitive screening completed. Pass (P) or Failed (F)
<hr/>					

Appendix D: HF Education Expectations for Nurses

HF Education Expectations for Nurses

Who receives CHF education?

All patients with history of CHF and admitting diagnosis of CHF.

CHF Joint Commission required teaching – Signs and symptoms, low salt diet, daily weight, medications, activity, stop smoking, follow up with primary MD

Who is responsible for CHF teaching? Primary RN

Where is the CHF information documented?

1. Doc Flow (wrench in Heart Failure Medication)
2. RN Shift Summary – HF – if yes includes the following: Education -video, HF booklet/magnet, Cognitive screening, scale for daily weight, medication boot camp.
3. Nursing note – If not charted in other areas
4. Education record – Heart Failure template.
 - a. General Care education section - check heart failure section. As education is completed, record information taught in comment section (example - video, daily weight, etc.)
5. Assignment sheet – inform charge nurse - education is completed or NA if education not possible due to patient condition, mentation, or place of residence (nursing home)

Cognitive Evaluation – the registered nurse should complete mini cognitive evaluation. If patient fails, cognitive screening notified the MD for an order for a full cognitive evaluation by OT.

Appendix E: Daily HF Teaching Expectations

Daily HF Teaching Expectations

Day of admission/transfer – Document history on admission navigator/heart failure doc flow sheet/ if needed in nursing note

1. Weight - record type of scale used
 - obtain order for daily weight (if not ordered)
 - explain importance of daily weight, use white board to help patient compare their
 - Weight. Explain importance of bringing weight record to doctor visit.
2. Strict I&O All HF patients
 - obtain order for I&O (if not ordered)
 - admission set up room to measure output – inform PCA
 - educate patient why it is important
3. Initial Assessment – admissions/transfers (obtain history)
 - a) Medication - Doc Flow -document
 - Is patient taking their medication as prescribed? Yes/No If no, why? (Inform MD)
 - Does patient set up his or her own medications? Yes/No
 - If no, who sets up medications?
 - Do you use a pill organizer/ pill bottles? Give patient a pill organizer if needed.
 - b) Breathing
 - If short of breath, for how long?
 - Do they need to sleep with head elevated?
 - Do they use oxygen at home? Inform SW/CM if patient needs transport tank at discharge
 - c) Edema
 - Is edema present?
 - If yes - How long have they had swelling? Do they elevate legs at home?
 - d) Diet- Low Salt
 - What type of diet does patient eat? Do they cook with salt? What type of snacks?
 - Are they high salt? Where do they eat out?

- Are they aware of sodium in foods? Do they know how to read labels on packages?
- Do they drink large amount of fluids during day?
- Dietitian consult to help patient/family understand low salt diet or if they have

Questions.

4. Give patient CHF booklet, CHF magnet, weight record

CHF Magnet – Use each symbol to teach CHF information

CHF booklet – gives more information about each symbol

Appendix F: Patient and Family Education

Patient and Family Education (Complete only after Cognitive Screening)

1. Weight - RN monitors daily weight trend
 - Is same type of scale used – if different why, does patient need reweigh
 - Did weight increase - reweigh if needed Explain to patient why reweighing needed
2. I&O - Record and monitor I&O every shift.
3. Determine who needs education (patient, family, Care giver, Group Home, etc.)
4. HF video – Video on demand
 - After viewing, does patient have any questions?
 - Inform charge nurse that patient watched video
5. HF booklet/magnet information - If patient able continue teaching
 - Use CHF magnet symbol to teach CHF Booklet
 - Explain each symbol on HF magnet to patient
 - Green zone is their daily goal
 - Encourage patient to place magnet on refrigerator or where seen daily
 - Check magnet each day to see if they are still in green zone.
 - Call primary doctor if symptoms cause patient to change from green zone to yellow zone.
 - Call 911 if symptoms increase to red zone

** Information Regarding Magnet symbols **

Medication –

- Reinforce importance of taking medications as prescribed
- If family member sets up medication, arrange for teaching of discharge Medication, side affects
- Medication boot camp (Use bead med bottles) at Charge Desk
 - a. Can patient/family read information on medication bottles?
 - b. Does patient/family know how to set up medications?
 - c. Does patient need home medication set up? Inform SW/CM

Weight

- Do they have a scale? Yes/No (If no give patient a scale)

- If Yes - Do they weigh themselves daily and record information? Yes/No
- When should they weight themselves? First thing in the morning, right after
Voiding, wearing same clothes, before drinking or eating anything.
- Has weight increased? By how much? No more than 3 lbs. in a day/5 lbs. in a
week. Record weight on weight record form.
- Instruct patient to bring home weight record to clinic appointments

Edema

- Does patient know how to check for edema? How high does swelling go?
- Does patient elevate legs at home?
- Does patient know when to call doctor if they have increased swelling?

Breathing

- Does patient use oxygen at home?
- Does patient know when to call MD if breathing becomes more difficult?
- Does the patient smoke?
- Instruct patient how smoking affects heart and breathing?
- Does patient want to stop smoking? Give stop smoking information

Diet

- Question patient regarding type of foods they eat. Snacks? Type of take out?
- Are their diet choices high in salt?
- Place dietary consult if needed

Activity

- What is their normal amount of activity? Encourage activity.
- Are they short of breath with activity?

Doctor Visits

- Do you have a primary doctor? (If no, contact SW/CM)
- Do you regularly see your primary doctor?
- If no, is it do to financial issues or transportation issues (contact SW/CM)

6. Determine understanding of information – Teach back – ask patient to tell you what they understand about an education area. Ask open-ended question to determine if patient understands information.
7. Documentation

RN Shift Summary – reflects education still needed,
When education completed document - Education Completed

Education Record – use comment section to document CHF education
CHF education must be completed after cognitive screening and before patient is discharged.

Appendix G: PowerPoint Presentation

PowerPoint Presentation on Nursing Education on HF and Cognitive Screening



Program Objectives

- ▶ **For Nurses**
 - Increased understanding of heart failure
 - Utilizing cognitive screening tool for HF patients
 - Recognition of patients needing HF teaching
 - Ability to provide Heart Failure Education as part of the hospital's Core Measure

Heart Failure - The Size of the Problem

- ▶ Affects 4-5 millions Americans
- ▶ Chronic and progressive disease
- ▶ Most costly cardiovascular illness in USA
- ▶ Accounts for 12 to 15 million office visits and 6.5 million hospital days each year
- ▶ Over 550,000 patients are diagnosed with HF for the first time each year
- ▶ More Medicare dollars are spent on diagnosis and treatment of HF than on any other diagnosis

ACC,AMA 2009

Definition of Heart Failure

- ▶ It can result from any of several structural or functional cardiac disorders that impair ventricular filling or ejection.
 - Some or all of these structural or functional changes may be present in varying degrees, without a precise correspondence to HF.

Definition of Heart Failure

- There is no single diagnostic test for HF
- HF is diagnosed by history and clinical findings:
 - **dyspnea** and **fatigue** - limit exercise tolerance, and
 - **fluid retention** - lead to pulmonary congestion and peripheral edema.

Diagnosis and investigation

- ▶ Take note of patients presentation
- ▶ Full blood count, fasting blood glucose
- ▶ Serum urea, electrolytes. Urinalysis
- ▶ Thyroid function and chest X-ray(a normal x-ray does not exclude CHF)
- ▶ 12 lead EKG
- ▶ Need for echocardiogram will depend on the BNP or NT-pro-BNB results

Etiology of Heart Failure

- ▶ The primary causes of heart failure are:
 - ▶ Coronary artery disease
 - ▶ Hypertension
 - ▶ Dilated Cardiomyopathy
- ▶ Risk Factors include:
Hypertension, smoking, obesity, diabetes, metabolic syndrome, alcohol abuse, COPD, increasing age

Heart Failure is Progressive

- ▶ Control of this disease is a long term project. It cannot be cured, but signs and symptoms can be controlled, and disease progression slowed.
- ▶ Treatment will vary related to the severity, “stage”, or “class” of failure

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Common Heart Failure Symptoms and Signs

- ❖ Dyspnea
- ❖ fatigue
- ❖ edema,
- ❖ orthopnea (dyspnea when head is not elevated)
- ❖ paroxysmal nocturnal dyspnea
- ❖ cough
- ❖ anorexia

Signs

Increasing jugular venous distension; S3 gallop, rales, edema

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The “Vicious Cycle”

The widespread incidence of HF is due to a difficult combination of factors:

- Risk factors are common and not well controlled.
- Progression from risk factor to HF is not curable, but it is generally controllable.
- Numerous therapeutic choices arise within the natural history of the disease.
- HF will worsen without careful attention to maintenance and therapy by patient and caregivers.

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How We Can Break the “Vicious Cycle”

- ❖ Provide appropriate treatment and teaching during inpatient admissions
- ❖ Educate the patient to provide appropriate self-care.
- ❖ Educate the patient to seek assistance promptly when indicated

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Core Measures

- Guidelines established by the Center for Medicare and Medicaid Services (CMS) to gauge a hospital's performance in the following national standards of care.
- These standards are based on evidence and research and have been shown to get the best results for patients.

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Medicare Performance Measure

Risk Standardized 30-day all- cause
readmission rate after heart failure
hospitalization.

Heart Failure Core Measures

Patient/Family Education

- ▶ Smoking Cessation (if smoked anytime within the past year!)
 - ▶ Activity Level
 - ▶ Diet
 - ▶ Follow-Up Appointments
 - ▶ Weight Monitoring
 - ▶ What to do if symptoms worsen
- ▶ HF patients are discharged home with written instructions addressing all of these items.

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Behavioral modifications

- ▶ No ETOH Consumption
- ▶ No smoking- offer smoking cessation advice and support
- ▶ Promote low intensity exercise with stable heart failures
- ▶ Dietary Changes- <6g/day of salt
- ▶ Do not use "salt substitutes" due to high potassium content
- ▶ Monitor I&O
- ▶ Tailored approach on fluid restriction advise
- ▶ Weight at a certain time of the day- report any weight gain 1.5-2kgs in 2 days
- ▶ Avoid cranberry juice if on Coumadin – increased drug potency
- ▶ Avoid grapefruit juice if on simvastatin- interfere with liver mechanism of the drug
- ▶ Avoid St john's wort supplements- interact with warfarin, digoxin, splenron and selective serotonin re-uptake inhibitors

How Do We Know What to Teach?

- ▶ All the pertinent information is in the Heart Failure patient Handbook
 - ▶ **Please familiarize yourself with the content**
- ▶ RN need to review the heart failure teaching points and provide the handbook to the patient/family
- ▶ Please take the time to review the heart failure video before the patient/family viewing.

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HF patient cognitive screening

- ▶ Utilized cognitive screening tool
- ▶ Wrench tool in to doc flow sheet
- ▶ Patient pass or fail
- ▶ Pass- continue with HF teaching
- ▶ Patient fails- inform provider and order for full cognitive screening by OT

The Cognitive Assessment

Complete initial assessment Data Tool in Epic.

1. Is patient alert and oriented?
2. What year is it now?
3. What month is it now?
4. Please repeat this phrase after me: John Brown 42 Market Street Chicago. (Have patient repeat until patient says it correctly) Instruct the patient to remember that name and address for a few minutes.
5. About what time is it without looking at the clock (within an hour)?
6. Say the months of the year in reverse order.
7. Repeat the name and address I asked you to remember.

General Questions

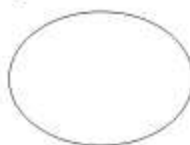
1. Patients age 18 and above with HF as primary or secondary admission diagnosis
2. Patients on more than 5 medications
3. Last admission date
4. Is English their primary Language?
5. What method does the patient use at home to organize their meds?
6. Does the patient organize their own meds?
7. If no who is responsible for doing this?
8. What is the patient's primary residence?
9. Lives at an assisted living facility and lacks help with medication set up

MINI COGNITIVE SCREENING TOOL

Patient: _____ Assessed by: _____

Date Completed: _____

1. Instruct the patient to listen carefully to and remember the following three (3) words and then to repeat the words back to you: **TABLE**, **CAR** and **ORANGE**
2. Instruct the patient to draw the face of a clock using the patient's copy of mini-cog cognitive screen



After the patient puts the numbers on the clock face, ask him or her to draw the hands of the clock to read 9:10.

3. Ask the patient to repeat the 3 previously stated words.

SCORING

1. **Word recall score** _____

Give 1 point for each recalled word after the Clock drawing test.

Patient recalling none of the three words = 0

Patient recalling all three words = 3

2. **Clock drawing Score** _____

Give 2 points for a normal clock drawing test with the hands and numbers in the right places, and 0 points for an abnormal clock drawing test.

Reference

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- ▶ Gheorghide M, Filippatos G, De Luca L, Burnett J. Congestion in acute heart failure syndromes: an essential target of evaluation and treatment. *Am J Med*. 2006;119(12suppl 1):S3-S10.
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- ▶ Metra M, Dei Cos L, Binzow MR. The pathophysiology of acute heart failure—it is a lot about fluid accumulation. *Am Heart J*. 2008;155:1-5.

Appendix H: Evaluation of HF Education

Evaluation of HF Education

1. Content of Educational Program.					
A. Does the educational program address all the objectives for patients and nurses understanding and management of HF patients? Yes <input type="checkbox"/> No <input type="checkbox"/> If No, please add your comments/recommendations.					
<hr/>					
<hr/>					
<hr/>					
2. Objectives of the Educational Program.					
	Strongly Agree				Strongly Disagree
	1	2	3	4	5
<u>Nurses objectives:</u>					
A. Increased understanding of HF disease.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. Utilizing cognitive screening for HF patients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C. Recognition of patient needs for teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D. Understanding the vicious cycle of HF	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. Understanding HF as a core measure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Please note below any topics or comments you think of that can enhance or change this quality initiative project					
<hr/>					
<hr/>					
<hr/>					
4. Overall Evaluation.					
A. Were you able to understand the management of patients with HF? Yes <input type="checkbox"/> No <input type="checkbox"/> If No, then what areas were difficult to understand? Recommendations?					
<hr/>					
<hr/>					
<hr/>					

Thank you for completing this evaluation.

Appendix I: The PowerPoint on Dissemination of the Quality Improvement Project

PowerPoint Dissemination of Quality Improvement Project



Effectiveness of Cognitive Screening for Heart Failure Patients.

Comfort Nkengla RN, MSN.

DNP Project Dissemination: Submitted in Partial Fulfillment of
the Requirements for the Degree Doctor of Nursing Practice
Walden University



Research Question

- ▶ The project is a quality improvement (QI) initiative on analyzing the effectiveness of cognitive screening utilizing secondary data.
- ▶ The project question is: How effective is cognitive screening for heart failure patients in reducing readmission rates?

Background

- ▶ Joint Commission's core measures
- ▶ One of the most costly diseases covered by Medicare
- ▶ Cognitive impairment with HF patients
- ▶ High admission/readmission rates

Britz & Dunn, 2010

Strategies in Reducing Readmission Rate of HF Patients

- ▶ Enhanced admission assessments
- ▶ Mandatory patient education on all HF patients
- ▶ Post acute care follow-up
- ▶ Mini cognitive screening and full cognitive screening on HF patients
 - ❖ Screening the patients' cognitive status in order to individualize each patients' plan of care based on their results and to allocate resources to manage their diseases

Conceptual Models and Theoretical Framework

Orem's theory in these patients population can be utilized in these three areas:

- ▶ The theory of self-care
- ▶ The theory of self-care deficit
- ▶ The theory of nursing systems

Fawcett, 2001; Orem, 2001.

Purpose/Aim

- ❖ The aim of this project is to know if there is a reduction in HF readmission rates after patients are screened for cognitive impairment and have personalized care plans based on their needs.

Key Factors

- ▶ Assessment of patients' cognitive status (Right patient)
- ▶ Effectiveness of cognitive screening tool (Early identification)
- ▶ Allocation of resources based on patient's cognitive status(Outreach programs)

Project Design and Methods

- ❖ Descriptive correlational design:
 - ▶ Evaluate trends
 - ▶ Identify emerging problems
 - ▶ Identify areas for further study
- ❖ Mini-Cognitive (Mini Cog) assessment tool

Assumptions and Limitations

- ▶ Patient's perspective of the disease
- ▶ The nurses' attitude and biases
- ▶ Patient compliance
- ▶ Language barriers
- ▶ Early stages of cognitive impairment
- ▶ Unaccounted HF patients
- ▶ Patients pre existing condition and Medications

Significance/Relevance to Practice

- ▶ Growing number of patients diagnosed with HF
- ▶ Increased hospitals admission/readmission rates of HF patients
- ▶ Section 3025 of the Affordable Care Act added a section 1886(q) to the Social Security Act (CMS)
- ▶ Increased Medicare patients readmitted within 30 days of discharge. (CMS.2012).

Population Sampling and Data collection

- ▶ All patients with Primary diagnosis of HF
- ▶ HF education included as part of patients care plan
- ▶ All patients admitted to S8 screened for cognitive impairment
- ▶ Family members screened for cognitive impairment only if they agreed to be managing patients health at home
- ▶ Data on family members screened not to be included in analysis
- ▶ All data entered by RN through HF work bench report electronically
- ▶ No patient identifier to be use on data

Statistical Analysis

- ▶ Data presented as expected value - HF patients screened for cognitive impairment and patient not screened
- ▶ Data retracted through Horizon Business Insight
- ▶ Qualifiers included " readmits within 30 days qualified as inpatient service cardiovascular and initials discharge date, year and month between June 2014 and December 2014,
- ▶ All patients identifies excluded
- ▶ Patient demographic e.g. age, gender and New York heart Association HF classifications systems excluded
- ▶ Patient average length of stay and readmission diagnosis excluded
- ▶ Chi square test was used to analyze univariate association between categorical variables.

Project Evaluation Plan

- ▶ Focused on HF patients cognitive status with a goal of reducing readmission rate
- ▶ In put form unit practice council members
- ▶ HF steering committee
- ▶ Feed back from patients and family on cognitive screening processes
- ▶ Unit charge nurse feedback
- ▶ Feed back from social services on data collection
- ▶ Review of other performance management tools

Findings

- ▶ 268 patients reviewed
- ▶ 156 admitted on S8 and screened for cognitive impairment
- ▶ 112 patients reviewed not admitted on S8 - not screened for cognitive impairment
- ▶ 24 readmitted on S8 with cognitive screening and 24 readmitted not admitted on south 8 with out cognitive screening
- ▶ Use of Chi square statistic
- ▶ Results of association between cognitive screening and reduction of Hf readmission
- ▶ Null hypothesis - cognitive screening of patients is not associated with reduced readmission rates according to the data

Implication and Limitation

- ▶ Offered tailored plans to HF screened to meet individual needs
- ▶ Minimization of hospital length of stay and readmission in partnership with the entire program of HF readmission reduction
 - ◊ Further studies is required to provide insight on which specific intervention are likely to impact the readmission rates of HF patients

Project dissemination

- ▶ Group of multidisciplinary Professionals in the hospital through power point presentation and poster board
 - ▶ HF steering committee
 - ▶ Unit Practice council
 - ▶ Quality practice and Education Committee
 - ▶ Cardiovascular leadership committee
 - ▶ Cardiac rehabilitation team
- ▶ Audience offered feedback (strength, assumptions & limitation)

conclusion

- ▶ Future plans t partner with cardiology department to explore more in-depth projects to explore types of services that may be considered and effective in reducing 30 day readmission of HF patients
- ▶ Start point on screening HF patients cognitive impairment and how resources could be allocated to them appropriately.

Questions

Thank you