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Implementation of a post-discharge education intervention to reduce 30 day readmission rates in African American males ages 18-50 with heart failure

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Abstract

Purpose: Heart failure is a clinical condition caused by a variety of cardiovascular diseases that create changes in the structure and function of the heart. A high morbidity is associated with heart failure due to frequent exacerbations of the disease and resultant frequent hospital readmission rates. Hospital readmission rates are more pronounced in African Americans. This project evaluates the effects of a 90 day post-discharge education intervention on readmission rates in a convenience sample of African American males ages 18-50 obtained from an urban teaching hospital.

Methods: A quality improvement project which utilized a 90 day post-discharge phone education intervention.

Results: A total of 10 participants were recruited and a final number of 6 actually consented to participate. Four participants immediately withdrew from the intervention. The remaining 2 each experienced at least 2 readmissions during the first 30 days post discharge and eventually withdrew from the intervention prior to the end of data collection.

Conclusion: The outcome of this project mirrors much of the current literature in terms of low compliance and high readmission rates in spite of education outreach.

Key terms: African American, males, 18-50 years old, young adults, heart failure, health promotion, racial differences in HF, and education.

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Implementation of a post-discharge education intervention to reduce 30 day readmission rates in African American males ages 18-50 with heart failure

The incidence of heart failure (HF) has increased rapidly in African American men at an in-patient facility in metro Atlanta. A typical case scenario involves an admission for a 33 year old African American male with advanced HF. The patient returns to in-patient care for the second time in 30 days for HF exacerbation. The patient has a positive past medical history of morbid obesity, hypertension, and frequent hospital readmissions over the last 12 months. The patient was diagnosed with HF approximately 7 years ago at the age of twenty-six, secondary to uncontrolled hypertension. The patient's failed attempts with medication and diet compliance resulted in the need to place a left ventricular assist device (LVAD) due to his worsening disease. The LVAD is a surgically implanted mechanical circulatory support for the left ventricle to improve heart function (Jacobson, Marzlin, & Webner, 2016). The LVAD was inserted as a bridge to heart transplantation. The clinical course remained challenging post LVAD implantation as a result of his continued non-compliance with treatment. During the patient's final readmission he suffered an embolic stroke followed by a hemorrhagic stroke and expired a few days later.

Background and Significance

HF is a clinical condition caused by a variety of cardiovascular diseases that create changes in the structure of the heart and generate abnormalities in cardiac function (Franciosa et al., 2010). HF affects approximately five million Americans and is a chronic disease that can worsen over time (Mitchell et al., 2011). A high morbidity is associated with heart failure due

to the frequency of admissions and readmissions (Durant et al., 2013). Readmission rates are more pronounced in the African American population (Durant et.al., 2013).

The incidence of HF is 50% higher in African Americans and is more prevalent in African Americans than in whites resulting in higher rates of morbidity and mortality in the African American population (Franciosa, Ferdinand, & Yancey, 2010). According to American Heart Association data "the annual incidence of HF in Whites is approximately 6 per 1,000 person-years, while in African Americans it is 9.1 person-years" (Sharma, Colvin-Adams, & Yancey, 2014). Especially concerning is the associated 45% greater risk of death among African Americans when hospitalized for HF versus the associated risk in whites (Sharma, et al., 2014). The study population represents young African American males ages 18-50 who may have head of household and parenting responsibilities. Each hospitalization impacts the entire family and the economics of that household. The onset of HF in African Americans occurs twenty times more frequently as compared to whites (Sharma, et al., 2014).

In a study found in the New England Journal of Medicine which investigated the incidence of HF in African Americans 18-30 years old over a 20 year period, the finding was African Americans have a higher incidence of HF before age 50 (Bibbens-Domingo et al., 2009). In African Americans the higher percentages related to prevalence, incidence, and mortality are attributable to modifiable risk factors such as hypertension, diabetes, and smoking (Sharma et al., 2014). A post-discharge education intervention for young African American males with HF can be useful in providing education reinforcement, support, and monitoring to improve modifiable risks associated with HF.

The clinical nursing problem is what education strategies are best implemented to address management in African American males ages 18-50 that will result in decreased 30 day

hospital readmission rates. Creation of an educational program that improves self-care practices that are defined as medication compliance, adherence to a low sodium diet, exercise, and self-monitoring as these practices are associated with improved outcomes in patients with heart failure (Woda, et al., 2015).

Problem Statement:

Despite the advancements in treatment, inequalities in the care of African American males with heart failure exist (Mitchell et al., 2011). Inequalities identified as income, access to care, and social support, which has the potential to negatively affect patient outcomes (Durant et al., 2013). Post-discharge methods have been shown to decrease hospital readmission rates in this segment of the population (Piamjariyakul, et al., 2015). Reducing hospital readmission rates is vital to reducing morbidity in African American males with HF (Durant et al., 2013). Current evidence to guide care of this patient population is sparse. Specifically, there is a lack of evidence based literature that informs providers of best education practices to prevent morbidity, hospital readmissions, and improved quality of life using self-care practices.

PICO Question:

In African American males 18-50 years old with HF can post-discharge follow-up calls aimed at education reinforcement and monitoring be an effective intervention to reduce 30 day hospital readmission rates?

Review of Literature

A dearth of evidence exists specific to the African American male HF population regarding the relationship between self-care behaviors and hospital readmissions. After conducting an exhaustive literature review using keywords: African American, males, 18-50

years old, heart failure, health promotion, young adults, racial differences in HF, readmission rates, and education. Limited studies were found.

Databases used were PubMed, CINAHL, Psych Info, Medline, Cochrane, and Science Direct. The initial keyword search resulted in 5,330 publications. The search parameters were refined and studies with the following conditions were excluded from the review: non-specific for African Americans, duplicate studies, participants with secondary heart conditions in addition to HF, or studies which lacked rigor. Studies were required to meet the following inclusion criteria to be included in the review: specific for African Americans and educational interventions aimed at improving knowledge or self-care behaviors for African Americans. Thirty-four studies met the necessary inclusion criteria. Those studies were further appraised and a final 14 were selected for this systematic review. Of the 14 studies there are 2 randomized control trials (RCT), 1 retrospective co-hort study, 1 call-to-action/expert opinion, 3 prospective studies, 2 descriptive studies, 3 systematic reviews, 1 cross-sectional study, and 1 pilot study.

Readmission Prevention

Five studies explored different approaches to readmission prevention. The first study was an RCT conducted by Durant and colleagues in 2013. The researchers examined the role of community health advisors in a supportive role for HF patients post discharge. The aim of the study was the prevention of 30 day readmissions by using the intervention of self-care education and support. Researchers implemented a post-discharge 30 day monitoring period that included follow-up visits and phone calls from a health advisor. The researchers found the measure to be valuable and concluded further studies utilizing education interventions are needed to provide comparisons.

The second study was conducted by Nundy et al., (2013), in which a 30 day single arm prospective study looked at the effects of using a text messaging education intervention for the African American HF population to improve self-care behaviors. Outcomes for this study were measured by 30 day readmission rates for the 60 study participants. Limitations of this study included outliers as some study participants dropped out due to telephone disconnections and the study was not specific for African American males. Limitations of the study were the inability for some participants to use a text messaging option. In spite of the limitations to the study the researchers found some improvement in HF self-management and a high degree of patient satisfaction.

The third study was conducted by Piamjariyakul, et.al (2015) and utilized a mixed method RCT with stratification. The study focused on the African American population and the use of a telephone coaching intervention program. Participants in the intervention group had fewer hospital readmissions. However, the limitations for this study were the small sample size (n=20) and the sample was not specific for African American males.

A study conducted by Stauffer et al. (2011) implemented a nurse led transitional care program to reduce readmission rates for patients with HF. The study offered valuable post intervention activities that positively affected HF readmission rates. An advance practice nurse (APN) made home visits to patients and was available by phone 7 days a week. The APN addressed needed self-care behaviors and social support. The intervention reduced readmission rates by 48% during the post-intervention phase. The study was chosen as an example of a successful intervention. Study was not specific for African American males.

The final study sought to identify risk factors in African American males covered by Medicare whom were discharged and associated readmission rates. Mirkin, Enomoto, Caputo, &

Hollenbeak obtained a sample of all admissions in 2011 of African American males with HF recently discharged from a Pennsylvania healthcare system. The researchers captured 30 day readmission rate data. No interventions were made to affect readmission rates. The findings revealed an association between prolonged length of stay and increased risk of readmissions.

Education and Self-care Behaviors

Similar to the study conducted by Durant and colleagues (2013). Further support for educational intervention is found in a systematic review conducted by Spaling, Currie, Strachan, Harkness, and Clark in 2015. The findings support that education and promotion of self-care behaviors positively impact HF patient outcomes. The authors strongly recommended efforts to educate and support HF patients as these metrics were found to positively impact health and quality of life for this population (Spaling, et. al, 2015). Specific areas of improvement were overall health and quality of life (Spaling, et al., 2015).

A photoview study was conducted by Woda, Belknap, Haglund, Sebern, and Lawrence in 2015. This was a descriptive study using a small sample size of 10 participants. The researchers used observation to assess HF patient's self-care behaviors. This study had no impact on self-care or disease management.

The study conducted by Finklestien and Dennison in 2010 used a home automated telemonitoring system to provide support and monitoring for HF patients. This was a pilot study using a sample of 10 African Americans with HF. The study utilized a telemonitoring system and a qualitative survey to assess disease management. Participant response to the telemonitoring system was found to be positive. However, the researcher did not associate outcomes to readmission rates.

Quality of Life Surveys

A qualitative survey report was conducted by Macabasco, Crawford, Stotts, Stewart, & Froelicher in 2010. This cross-sectional qualitative survey report examined the differences in low-income patients with HF and the perception of disease and related depressive symptoms influenced by race or gender. A comparison of males and females white and non-white with HF was completed using a survey. The study concluded that non-white males had a more negative perception of disease and depressive symptoms.

Consensus Statement/Systematic Review/Expert Opinion

Franciosa, Ferninand, & Yancey 2010 submitted a consensus statement generalizing the concern for the study of African Americans as it relates to HF treatment and management. The authors expressed the importance of further study to positively affect readmission rates and improve self-care behaviors.

Similarly, Mitchell and colleagues entered an expert opinion/ call to action to the Journal of the National Medical Association in 20ll. The author's noted the high incidence of HF in African Americans and the associated disparities as compared to other races. The discussion was generalized for all African Americans and was not specific for African American males.

The research team of Spaling et al. 2014, also completed a systematic review that examined 10 data bases, 1,421 papers, and 45 studies from 1995-2012. The researchers sought to identify the primary contextual factors and process that influence HF patient's self-care. The review found 6 contextual factors are present that influence self-care. The researchers found patients needed awareness and education around the following contextual factors: medication, diet, fluid management, timely help-seeking, self-efficacy, and HF as a body experience.

Comparative Studies

In 2014 Sharma, Colvin-Adams, & Yancey conducted a comparative review regarding prevalence and onset of HF in African Americans as compared to whites. The researchers determined that the prevalence of HF is higher in African Americans and the onset of HF is at an earlier age than in whites.

A 20 year prospective study was conducted by Bibben-Domingo and colleagues and published in 2009. The study assessed the incidence of HF among blacks and whites ages 18-30. The study specifically examined the incidence of HF before 50 years of age and made comparisons. Findings suggested the incidence of HF in African Americans before the age of 50 is substantially more common as compared to whites.

The final comparative study was conducted by Durstenfeld and colleagues from 2007-2010. The researchers completed a retrospective co-hort study of 8,532 hospitalizations of adults with HF at eleven hospitals in New York. The researchers compared readmission rates for African Americans, Whites, Hispanics, and Asians. The findings were African Americans have a higher rate of readmissions at 51% as compared to whites at 18%, Hispanics at 29%, and Asians at 3%.

In summary, the literature review shows an overall need for more systematic reviews and meta-analysis, as this metric is important in making comparisons that are statistically valid for the clinical question.

In conclusion, the synthesis of evidence reveals very few studies specific to the African American male population. Although, the evidence does address heart failure in general for African Americans and fourteen studies were found that support the need for post discharge

education and follow-up. However, few of the studies that met the inclusion criteria were found to have a high degree of rigor. As a result of the synthesis of evidence it is apparent that research that is focused on African American males ages 18-50 regarding self-care behaviors and readmission rates is needed.

Conceptual and Theoretical Framework

Dorethea Orem's theoretical framework is appropriate when looking at an intervention to address knowledge and self-care behaviors in patients with HF. This project has an outcome focus that aligns with Orem's self-care perspective and how optimizing self-care for a population improves patient outcomes (O'Shaughnessy, 2014). Orem's ideas about a person and the assumptions that people are composed of "an internal physical, psychological, and social nature with varying degrees of self-care ability" (Chinn & Kramer, 2008, p. 57), support the project goal to increase self-care behaviors through a post-discharge education intervention. Orem's systematic process of assessing knowledge, educating, motivating, reassessing and re-enforcing education is the guiding framework for the project intervention (Orem et al., 2003).

Implementation of an educational intervention assumes that there is a knowledge deficit. According to the assumptions made by Orem, patients often suffer from lack of or wrong information and this leads to a knowledge deficit that prevents effective management of disease (Mohammadpour et al., 2015). The importance of self-care is instrumental in disease management and patient education is an effective tool related to how well patients manage their disease.

Patients were identified and recruited during their inpatient visit on the Cardiovascular Stepdown/Congestive Heart Failure units. The units are divided into 2 separate units with 22 beds each. The average daily census is 18.6 for each unit. A total of 13,547 patients were seen

in 2017 for both units. The average length of stay is 5.14 days. The patient population is composed of HF patients, patients with left ventricular assist device (LVAD), cardiac post surgical patients, cardiac intervention patients (transaortic valve angioplasty repairs, cardiac angioplasty, cardiac catheterization, electrophysiology interventions/ablations), and primary medical cardiology patients.

Patients recruited for the study were African American males ages 18-50 with HF. Prior to discharge patients were consented for the study and given the Minnesota Living with Heart Failure Questionnaire (MLHF). The MLHF survey is a quality of life survey using a Likert scale. Participants were also given a Nature Spirit Body Composition Health Scale and Omron 5 Series Blood Pressure Monitor. Two days post discharge participants were called and asked questions from a pre-planned script (see appendix C).

The concepts of motivation and re-enforcement of natural ability as described by Orem are primary concepts used to improve self-care behaviors (Orem et al., 2003). Identifying study participants knowledge deficits and providing the information needed is an important measure to use to strengthen natural ability

Self-care and self-care efficacy are measured by the ability to understand disease processes and comply with those processes, as knowledge increases this leads to better self-care and confidence regarding the ability to control outcomes (O'Shaughnessy, 2014).

Methodology

The quality improvement project utilized pre & posttests, with African American males between the ages of 18-50 who were diagnosed with HF. Following Institutional Review Board (IRB) approval a convenience sample was obtained from a 450 bed, non-profit teaching hospital

in a large healthcare organization in the southeast. Criteria for study eligibility was a diagnosis of Grade III or IV heart failure, African American male, ages 18-50, and currently hospitalized in the Cardiovascular Stepdown/Congestive Heart Failure Unit. The definition of Class III heart failure is known "structural heart disease with prior or current symptoms of HF" (Jacobson, Marzlin, & Webner, 2016, p. 387). In addition, Class IV heart failure is determined by "Refractory HF requiring specialized interventions" (Jacobson et al., 2016, p. 387). Patients who were active in a current outpatient heart failure program were excluded from participation in the study. If eligible, participants were provided with a weight scale and a B/P monitor. Potential participants admitted to the Cardiology unit who met criteria were identified and invited to participate in the study by the student investigator and co- investigator. The Minnesota Living with Heart Failure Quality of Life (MLHF) Questionnaire was used as a pre and post educational intervention to compare efficacy of the post discharge intervention. The MLHF is a quality of life questionnaire that each participant was asked to complete. The MLHF questionnaire consists of 21 questions that apply to symptomology and well-being (Hak, Willems, Wal, & Visser, 2004). Participants responded to the questions using a Likert scale.

The student investigator personally funded the study equipment from funds set aside for the doctoral project in the event grant funding did not occur from an outside source. Funds were used to purchase B/P device instruments and weight scales that were given to participants to collect data. A total of 60 blood pressure monitors and weight scales were purchased for a total of $4500USD. No cost is associated with the use of the MLHF Questionnaire for the intended study purpose. There were no additional costs for copying education materials and MLHF copies.

The aim of the project was to identify an effective post-discharge education tool that would reduce readmission rates that occur within 30 days after hospital discharge. Key components covered in the educational intervention used in this project focused on the following self-care practices: medication compliance, adherence to a low sodium diet, exercise, and self-monitoring.

A total of 10 patients were recruited for participation beginning November 2017. Six patients completed informed consent. After being consented participants were given a pen and folder which contained the hospital's Heart Failure Education Guide Book, pre and post paper copies of the MLHF survey, 2 stamped return envelopes, student investigator's contact information, and a copy of the signed informed consent. Patients were called every Thursday at a time designated by the patient. The phone calls lasted between 30 minutes to one hour. The participants received education review regarding diet, graded exercise, B/P, weight, and medication compliance. Discussion included any difficulty with appointments or obtaining medications. If the patient did not answer the initial call a message was left. Calls were made every Thursday until the final patient dropped out. In the event the patient could not be reached at the pre-scheduled call time, 3 consecutive attempts were made to reach the patient over a 3 day period. If the patient could not be reached for the weekly call a message was left for a scheduled time for the next week and missed call was documented.

During the 90 day period data was gathered regarding self-care behaviors, compliance barriers, and physical data consisting of participant B/P and weight. Data was collected until March 2018. Data was collected and stored on a password protected computer to which only the student investigator had access.

Intervention and Data Collection

Al laptop was used for all participant data collection. A codebook was created from an Excel spreadsheet to the Statistical Package for Social Sciences (SPSS) version 25. All data obtained from calls and surveys for the study participants was coded by answer script. Descriptive statistical analysis was done and frequency tables were created for all qualitative data. The laptop was housed in a locked file cabinet in the office of the Student Principal Investigator and only the project team had access. The laptop with participant information has been secured with a password known only by the Student Investigator.

Analysis

The project received analysis support from Principal Investigator Dr. Susan Breslin, Co-Investigator Dr. David Markham, and Georgia State University DNP Program Director Dr. Kimberly Hires. The Statistical Package for the Social Sciences (SPSS) 25 is being used for analysis of study data.

Results

A total of 10 African American males between the ages of 18-50 years met the eligibility criteria and were recruited for this project. None completed the 90 day post discharge intervention. The aim of the project was to implement an education intervention that focused on self-care behaviors that correlated with decreased 30 day readmission rates among HF patients. This project had a high attrition rate of 80%. Therefore, the analysis is limited to a very small sample. It was not feasible to make any comparisons using a one-way ANOVA or a t-test. The mean age of the participants was 39.83 (SD=5.77). Participants ranged in age from 33 to 50 years of age (33, 37, 38, 39, 42, and 50 years, respectively).

Data was collected from participants post-discharge until dropout. One participant completed 75 days post-discharge and at the end of 75 days was not hospitalized or experiencing any symptoms that would point to readmission. Of the 6 participants 4 dropped out immediately after discharge and no data was collected. The 2 remaining participants experienced 2 readmissions within 30 days of discharge. One participant was referred to hospice 30 days post-discharge and withdrew from the study. The final participant remained in the study for 75 days. None of the participants returned the pre or post discharge MLHF survey. Finally, the remaining 2 participants did not log their blood pressure values and weight therefore no descriptive statistics were completed to summarize this data.

Discussion

One of the challenges of HF patients is the 30 day readmission rate. African American HF patients have little success with post discharge interventions, phone calls, texts, and post discharge visits have little consistent efficacy for preventing readmissions (Banks, Ong-Flaherty, & Sharifi, 2016). This project aimed to find a post discharge intervention that was successful in reducing readmission rates. The literature found did not offer very much supportive data to suggest any of the interventions have worked for this population. The studies conducted by Durant and colleagues in 2013 which utilized a post-discharge community health advisor and Stauffer et al. (2011) utilizing APNs revealed the most success with decreasing readmission rates.

Consistent with these literature reviews two of the study participants which participated for the longest length were readmitted to inpatient care twice within the first 30 days post-discharge. The 2 participants had the most familial support and this aligns with the literature

evidence that social support is very important for the HF patient (Durant et al., 2013). The actual visits and phone calls offered much needed emotional and psychosocial support to HF patients versus programs that only offered text messaging contact (Nundy et al, 2013). Similar to the text messaging intervention this study had limited success with phone calls as compared to the actual post discharge visits in the 2013 Durant study. Overall, failed behavioral change is not uncommon in African American HF patients (Woda, Haglund, Belknap, & Sebern, 2015). In addition, literature reviews suggest African Americans have little success with post discharge interventions and those interventions using phone calls, texts, and visits post discharge have low efficacy for preventing readmissions (Banks, Ong-Flaherty, & Sharifi, 2016).

Readmission data can be further hampered because most readmission studies focus on readmission to the same facility from which the patient was discharged. One unusual incident occurred with 2 of the participants. The final 2 participants were hospitalized to different hospitals on successive readmissions. There was no real pattern or trend for accessing a different facility for readmissions disclosed. According to the participants the choice of hospitals was not based on location or urgency, but only preference for the readmission. After further discussion with the participants it was concluded the choice of hospitals was based primarily on the fact they had not entered this hospital in the last few readmissions. This is an important finding for providers as it creates difficulty for the primary heart failure provider to track patient's readmissions, perform follow-up, assess education needs, and monitor adherence to care. Consistent location for transition of care is very important in following HF patient's adherence to prescribed treatments, follow-up care, and any worsening condition (Coleman, Parry, Chalmers & Sung-Joon Min, 2006).

One could conclude that numerous barriers exist for the study population which include low adherence to prescribed heart failure regimens resulting in frequent hospital readmissions. The African American population in general experience higher mortality and morbidity as compared to other racial populations and this is complicated by very few studies that have high rates of success with post-discharge interventions (Banks et al., 2016). According to Woda, et al. (2015) "Sociocultural factors, such as discrimination and poverty, can make it more difficult" for African Americans to engage in positive behaviors regarding care as compared to other races (p. 173).

Limitations

The study limitations are the small sample size and dropout rate. The literature of current research articles found did not mirror the current study limitations as it relates to dropout rates among African Americans. The telephone intervention method used in the study is supported by literature as an education intervention most participants find convenient and easy (Piamjariyakul et al, 2015). Therefore, when evaluating causes of the high dropout rate the method used does not appear to have been a contributing factor.

Due to limitations and barriers related to the limited amount of data due to the sample size and dropout rate, there is little generalizability to this study and the specific population chosen.

Practice Implications

Creating an education, support, and monitoring program specific for African American males ages 18-50 that improves self-care practices is supported by literature findings. African Americans suffer poorer health outcomes as compared to the general heart failure population

(Banks et al., 2016). Education program components are defined as medication compliance, adherence to a low sodium diet, exercise, and self-monitoring as these practices are associated with improved outcomes in patients with heart failure (Woda, Haglund, Belknap, & Sebern, 2015). There are few studies aimed at this population in spite of the high risk of mortality identified for this group of HF patients (Durant et al., 2013).

Although literature does support education, in this specific study familial support was a primary factor in the sustained participation of the one patient that continued for 75 days. Emotional and social support has been found to be very important. The participant that remained in the study for 75 days had the support of parents, siblings, and a teen-age son. The patient was very engaged in the afterschool sports activities of the son and communicated during weekly calls how important it was that he avoid hospital readmissions and felt well enough to attend his son's sports activities. According to Piamjariyakul et al., (2015) "a known cultural strength of African Americans is having multiple family members involved in caregiving" (p. 468).

Important for future study is determining if treatment regimens and post-discharge programs are culturally sensitive to diet guidelines and if prescribed protocols are sensitive to economics that impact the purchase of healthy food and medications (Banks, et al., 2016). Additionally, intervention programs should include evaluation for family support, and cultural norms of African Americans (Banks et al., 2016). The discoveries of programs that positively impact this population are necessary and further study is needed to determine what measures work and what interventions do not and why. Current studies reveal low success with impacting this population for the long term which also supports continued study. Finally, evaluation of how trust impacts African Americans as it regards their provider and the health care system in general and how this may influence treatment adherence (Banks et al., 2016). A multi-faceted

approach to post-discharge interventions that includes sociocultural, economic, psychosocial, and heart failure standardized protocols may garner improved and sustainable success for disease management and may be prudent to incorporate in future studies.

References

Almkuist, K.D. (2017). Using Teach –Back Method to Prevent 30-Day Readmission in Patients with Heart Failure: A Systematic Review. *Med/Surg Nursing, Sept/Oct 2017, 26(5). 309-351.*

Banks, A. D. Ong-Flaherty, C., & Sharifi, C. (2016). Culture of Oppression in African-Americans with Heart Failure. *Journal of Cultural Diversity, 23(4), 139-143.*

Barnasm, S., Zimmerman, L., & Young, L. (2011). An integrative review of interventions promoting self-care of patients with heart failure. *Journal of Clinical Nursing, 21,* 448-475. doi.org/10.1111/j.1365-2702.2011.03907.x.

Bibbens-Domingo, K., Pletcher, M. J., Lin, F., Vittinghoff, E., Gardin, J. M., Arynchyn, A., Lewis, C. E., Williams, O. D., & Hulley, S. B. (2009). Racial Differences in Incident Heart Failure Among Young Adults. *New England Journal of Medicine, 360(12), 1179-1190.*

Centers for Disease Control (2014). Recent Trend in Heart Failure-Related Mortality: United States, 2000-2014. Retrieved from: www.cdc.gov/nchs/data/databriefs.

Chinn, P. L., & Kramer, M. K. (2008). *Integrated Theory and Knowledge Development in Nursing* (7th ed). St. Louis, MO.: Mosby Elsevier.

Coleman, E. A., Parry, C., Chalmers, S., & Sung-joon, M. (2006). The Care Transitions Intervention. *ARCH Internal Medicine, 166, 1822-1828.*

Durant, R. W., Brown, Q. L., Cherrington, A. L., Andreae, L. J., Hardy, C. M., & Scarinci, I. C. (2013, Jan/Feb). Social support among African Americans with heart failure: is there a role for community health advisors? *Heart & Lung: The Journal for Acute and Critical Care*, *42*(1), 19-25. doi.10.1016/j.hrtling.2012.06.007.

Durstenfeld, M. S., Ogedegbe, O., Katz, S. D., Park, H., & Blecker, S. (2016). Racial and Ethnic Differences in Heart Failure Readmissions and Mortality in a Large Municipal Healthcare System. *JACC: Heart Failure, 4(11), 885-893, doi:org/10.1016/j.jchf.2016.05.008.*

Finkelstein, J., Cha, E., Dennison, C. R. (2010). Exploring Feasibility of Home Telemanagement in African Americans with Congestive Heart Failure. *MEDINFO (2010), doi. 10.3233/978-1-60750-588-4-535.*

Franciosa, J. A., Ferdinand, K. C., & Yancey, C. W. (2010, Jan/Feb). Treatment of Heart Failure in African Americans: A consensus statement. *Congestive Heart Failure*, *16*(1), 27-38. Doi.10.1111/j.1751-7133.2009.00118.x.

Hak, T., Willems, D., Wal, G. V., & Visser, F. (2004, March 1, 2004). A qualitative validation of the Minnesota Living with Heart Failure Questionnaire. *Quality of Life Research, 13*, 417-426. doi.org/10.1023/B.QURE.0000018487.35591.6e.

Jacobson, C., Marzlin, K., & Webner, C. (2016). *Cardiovascular nursing practice vol. #1 (2nd ed).* Burien, WA: Cardiovascular Nursing Education Associates.

Macabasco, O'Connell, A., Crawford, M.H., Stotts, N., Stewart, A., Froelicher, E.S. (2010). Gender and racial differences in psychosocial factors of low-income patients with heart failure. *Heart & Lung: The Journal of Acute and Critical Care,* 39(1). 2-11.

Mitchell, J., Ferdinand, K. C., Watson, K. E., Wenger, N. K., Watkins, L. O., Flack, J. M., ... Wright, J. J. (2011, Feb.). Treatment of Heart Failure in African Americans-A Call to Action. *Journal of the National Medical Association*, *103*(2), 86-98.

Mohammadpour, A., Rahmati, S., Narges, K., Shahla, A., Ali, A., & Akhand, M. (2015, June 2015). The effect of a supportive educational intervention developed based on the Orem's Self -Care theory on the self-care ability of patients with Myocardial Infarction: a randomized controlled trial. *Journal of Clinical Nursing*, *24*(11/12), 1686-1692. doi.10.1111/jocn.12775.

Moran, K., Burson, R., & Conrad, D. (2014). *The Doctor of Nursing Practice Scholarly Project A Framework for Success*. Burlington, MA: Jones and Bartlett.

National Quality Forum. Retrieved from www.qualityforum.org.

Orem, D.E., Taylor, S. G., & Renpenning, K. M. (2003). *Self-Care Theory in nursing: Selected papers of Dorethea Orem.* New York, NY: Springer Publications.

O'Shaughnessy, M. (2014, Sept/Oct). Applications of Dorethea Orem's Theory of Self-Care to the Elderly Patient on Peritoneal Dialysis. *Nephrology Nursing Journal, 41(5), 495-498.*

Piamjariyakul, V., Werkowithc, M., Wick, J., Russell, C., Vacek, J. L., & Smith, C.E. (2015). Care Giver Coaching Program Effect: Reducing Heart Failure Rehospitalizations and Improving Care Giver Outcomes Among African Americans. *Heart & Lung: The Journal for Acute and Critical Care, 44, 466-473.*

Sharma, A., Colvin-Adams, M., & Yancey, C. W. (2014). Heart Failure in African Americans: Disparities Can Be Overcome. *Cleveland Clinic Journal of Medicine, 81(5), 301-311, doi: 10.3949/ccjm.81a.13045.*

Spaling, M.A., Currie, K., Strachan, P.H., Harkness, K., Clark, A.M. (2015, Nov.). Improving support for heart failure patients: a systematic review to understand patient's perspective on self-care. *Journal of Advanced Nursing, 71(11), 2478-2489.*

Stauffer, B.D., Fullerton, C., Fleming, N., Ogola, G., Herrin, J., Martin-Stafford, P., & Ballard, D. J. (2011). Effectiveness of a Transitional Care Program for Heart Failure. *Arch Intern Med. Association, 171(4), 1238-1243.*

Woda, A., Haglund, K., Belknap, R.A., & Sebern, M. (2015). Self-care behaviors of African Americans living with heart failure. *Journal of Community Health Nursing, 32, 173-186.* doi. 10.1080/07370016.2015.1087237.

Appendix A

Evidence Table

Table 1 Search Strategy

Search Criteria	Information
Key words used	African American, heart failure, low income, self-care, systematic reviews, meta-analysis, age 25-50, health promotion, racial differences in HF, young adults.
Databases used	CINAHL, PubMed, Cochrane, Science Direct, PsycINFO, Medline
Other	Review references

Search Results

Employment of the advanced search mode in varying groupings of key words resulted in 5,330 studies. After review of titles, abstracts, and rigor of studies most were found to be irrelevant to the desired clinical population or were duplications. A total of 34 studies were read in detail and of those only 14 remained as somewhat relevant with some degree of rigor. Table 2 illustrates the flow of studies from data base search to inclusion of 14 relevant studies.

Table 2

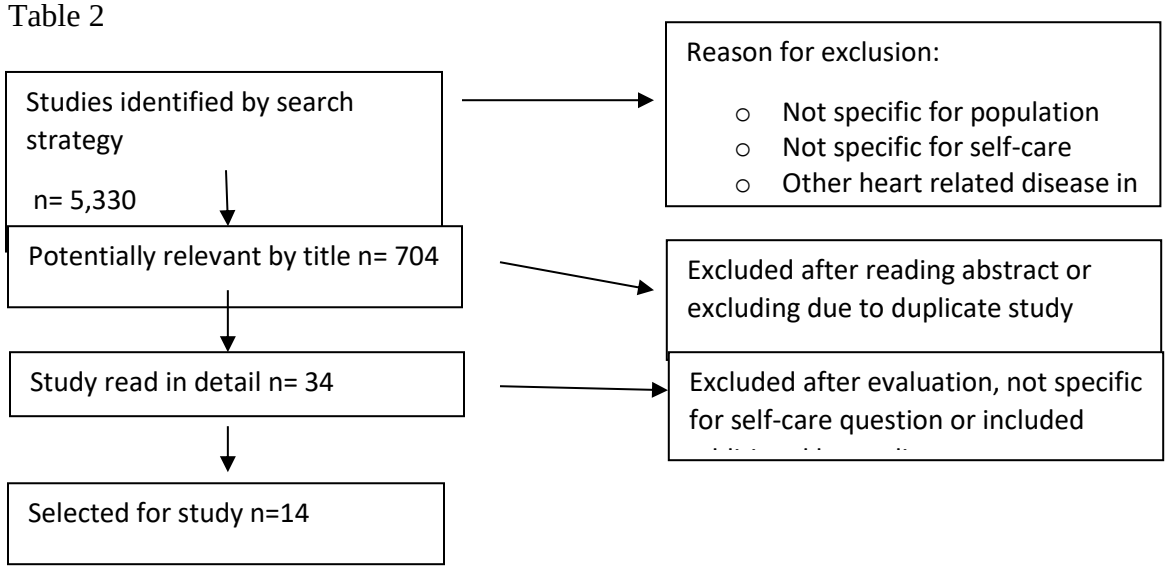


Table 3 Evidence Matrix Table

Durant, R.W., Brown, Q.L., Cherrington, A.L., Andreae, L. J., Hardy, C.M., & Scarinci, I.C. (2013, Jan/Feb). Social Support among African Americans with heart failure: is there a role for community health advisors? *Heart & Lung: The Journal for Acute and Critical Care,* 42(1) 19-25.				**Grade level of Evidence:** Strong recommendation/high quality evidence
Hypothesis/ Question	**Design**	**Sample**	**Measurement**	**Results/Implications**
To look at readmission rates for a sample group after a community advisor education intervention for African American HF patients.	RCT	Low income African American males & females	Participants were monitored for 30 day readmission.	Participants that received visits/calls from community advisor had fewer readmission rates as compared to those who did not have a community advisor intervention. Limitations: not specific for males 25-50 years old.

Franciosa, J.A., Ferninand, K.C., & Yancey, C.W. (2010, Jan/Feb). Treatment of Heart Failure in African Americans: A consensus statement. *Congestive Heart Failure*, 16(1), 27-38.				**Grade level of Evidence**: Moderate recommendation/low quality evidence
Hypothesis/ Question	**Design**	**Sample**	**Measurement**	**Results/Implications**
To inform regarding the higher risk for HF in the African American population and to introduce thoughts regarding disparities.	Consensus Statement, expert opinion	None	No measure	Strong recommendation regarding background and significance/low quality evidence Limitations: generalized statement for African Americans

Mitchell, J., Ferdinand, K.C., Watson, K., Wenger, N.K., Watkins, L.O., Flack, J.M., Wright, J.J. (2011, Feb.). Treatment of Heart Failure in African Americans: A Call to Action. *Journal of the National Medical Association*, 103(2), 86-98.				**Grade level of Evidence:** Moderate recommendation/low quality evidence.
Hypothesis/ Question	**Design**	**Sample**	**Measurement**	**Results/Implications**
Expert opinion discussion regarding the higher incidence of heart failure in African Americans and the associated disparities.	Call to Action, expert opinion.	None	none	Limitations: expert opinion and not specific for males age 25-50
Nundy, S., Razi, R.R., Dick, J.J., Smith, B., Mayo, A., O'Connor, A., Meltzer, D.O. (2013, March). A text messaging intervention to improve heart failure self- management after hospital discharge in a largely African American population: before and after study. *Journal of Internet Research*, 15(3), 53.				**Grade level of Evidence:** Strong Recommendation/ high quality evidence
Hypothesis/ Question	**Design**	**Sample**	**Measurement**	**Results/Implications**
To explore the effects of text messaging in an African American population with HF. Messaging used to educate	30 day Single Arm Prospective study. Pre and post	African American males and females	Pre and post study aimed at 30 day readmission data.	Some improvement in HF self -management but a higher degree of patient satisfaction Limitations: lack of a cell

and reinforce self-care behaviors. Outcome measured by 30 day readmission rates.	measurements	with HF. n=60		phone with text capability excluded some participants.
Woda, A., Belknap, R.A., Haglund, K., Sebern, M., Lawrence, A. (2015, Jan/Feb). 10 person photoview study: influence of HF self-care among low income AA. *Heart & Lung*: *The Journal of Acute and Critical Care*, 44(1), 33-38.				**Grade level of Evidence:** Moderate recommendation, low quality evidence
Hypothesis/ Question	**Design**	**Sample**	**Measurement**	**Results/Implications**
A look at low income patients with HF and their care givers and their self-reports related to disease and experience.	Descriptive Study	Photo view study n=10	Patient care give self-report qualitative data	No impact on self-care or disease management. Purely observational. Limitations: non experimental, limited sample.

Spaling, M.A., Currie, K., Strachan, P.H., Harkness, K., Clark, A.M. (2015, Nov.). Improving support for heart failure patients: a systematic review to understand patient's perspectives on self-care. *Journal of Advanced Nursing*, 71(11), 2478-2489.				**Grade level of Evidence:** Strong recommendation/high quality evidence
Hypothesis/ Question	**Design**	**Sample**	**Measurement**	**Results/Implications**
To generate patient focused recommendations to enhance the support of self-care behaviors in patients with HF.	Systematic review and qualitative interpretive synthesis.	Review of 30 reviews from 1995-2012.	Examination of patient's experiences, perspectives, and self-care behaviors. A look at support and the impact on daily living.	Findings indicate that patients recall health support and self-care advice but this knowledge does not translate into daily life. Knowledge alone does not improve self-care but support, promotion of self-efficacy and daily application is necessary. Limitations: generalize population, not specific for clinical study population (African American males 25-50).

Strachan, P.H., Currie, K., Harkness, K., Spaling, M. A., Clark, A.M. (2014, Jun.). Context Matters in Heart Failure Self-Care: A Qualitative Systematic Review. *Journal of Cardiac Failure*, 20(6), 448-455.				**Grade level of Evidence:** Strong recommendation/ high quality evidence
Hypothesis/ Question	**Design**	**Sample**	**Measurement**	**Results/Implications**
Identify the main contextual factors and processes that influence HF patient's self-care.	Qualitative Systematic Review, qualitative meta-synthesis's	10 data bases, 1,421 papers, 45 studies over a time span from 1995-2012	Qualitative study based on HF patient report through survey.	The findings that 6 types of contextual factors are present that influence self-care in HF patients. Limitations: review not specific for African American male population age 25-50 .

Piamjariyakul, V., Werkowitch, M., Wick, J., Russell, C., Vacek, J.L., Smith, C.E. (2015). Caregiver coaching program effect: Reducing heart failure re-hospitalizations and improving care giver outcomes among African Americans. *Heart & Lung: The Journal of Acute and Critical Care*, 44, 466-473.				**Grade level of Evidence:** Strong Recommendation/high quality evidence
Hypothesis/ Question	**Design**	**Sample**	**Measurement**	**Results/Implications**
Care giver advice and coaching and how it relates to fewer hospital readmissions for African American HF patients.	Mixed Method RCT with stratification.	African American patients with HF. n=20	Implementation of a coaching program by phone and compare hospital readmission rates between intervention group and non-intervention group.	Fewer hospital readmissions measured in the group with the applied coaching intervention. Limitations: Small sample size and sample not specific for African American males 25-50 years old.

Macabasco, O'Connell, A., Crawford, M.H., Stotts, N., Stewart, A., Froelicher, E.S. (2010). Gender and racial differences in psychosocial factors of low-income patients with heart failure. *Heart & Lung: The Journal of Acute and Critical Care*, 39(1). 2-11.				**Grade level of Evidence:** Strong recommendation/moderate quality evidence
Hypothesis/ Question	**Design**	**Sample**	**Measurement**	**Results/Implications**
Comparison of male to female and white to non-white patients with HF relating to perception of disease and depressive symptoms.	Cross-Sectional Study, qualitative survey report	55% women, 45% men, 65% white, 35% non-white n=65	Examine if differences in perception of disease and related depressive symptoms are influenced by race or gender.	Study concluded that non-white males had a more negative perception of disease and more depressive symptoms. Limitations: small sample, not specific for African American males 18-50 years old.

Finkelstein, J., Cha, E., Dennison, C. R. (2010). Exploring Feasibility of Home Telemanagement in African Americans with Congestive Heart Failure. *MEDINFO (2010), doi. 10.3233/978-1-60750-588-4-535.*				**Grade level of Evidence**: Low recommendation/low quality evidence
Hypothesis/ Question	**Design**	**Sample**	**Measurement**	**Results/Implications**
Home automated telemonitoring system with personalized treatment plans for patients with heart failure. System provides support as well as monitoring. Study to determine improvement in health for HF patients.	Pilot study in 10 African American heart failure patients. Semi-structured qualitative surveys used.	10 patients with heart failure.	Surveys to get patient feedback on the automated system and ease of use.	Response to the system was positive and participants felt the system could help them manage their disease. Limitations: population not specific for African Americans males ages 18-50. Study focus not associated with readmission rates and self-care behaviors.

Mirkin, K. A., Enomoto, L. M., Caputo, G. M., & Hollenbeak, C. S. (2017). Risk Factors for 30-day readmission in patients with congestive heart failure. *Heart & Lung, 46, 357-362.*				**Grade level of Evidence**: Strong recommendation/high quality evidence
Hypothesis/ Question	**Design**	**Sample**	**Measurement**	**Results/Implications**
To identify risk factors for readmission rates in patients with heart failure.	Study of all admissions for patients with CHF during 2011 using statewide discharge data in Pennsylvania.	African American males, covered by Medicare, discharged to a skilled nursing facility or to home with a home nurse.	Data capture of 30 day readmission rates for selected population.	Male sex, age, black race, and Medicare coverage, and prolonged length of stay associated with increased risk of readmission rates. Limitations: Not specific for African American males ages 18-50. In addition included length of stay and Medicare status.

Stauffer, B. D., Fullerton, C., Fleming, N., Ogola, G., Herrin, J., Martin-Stafford, P., & Ballard, D. J. (2011). Effectiveness and Cost of a Transitional Care Program for Heart Failure, *Arch Intern Med Association, 171(14), 1238-1243.*				**Grade level of Evidence**: Strong recommendation/high quality evidence
Hypothesis/ Question	**Design**	**Sample**	**Measurement**	**Results/Implications**
Nurse led transitional care program to reduce readmissions rates for patients with heart failure.	Prospective Study with controls. Post-discharge 30 day program.	Patients 65 years old and older discharged with a principle diagnosis of heart failure.	Comparison of the effect of the 30 day program on all cause readmission rates.	The intervention significantly reduced 30 day readmission rates by 48% during the post-intervention period. Limitations: population used not specific to study population of African American males ages 18-50.

Weintraub, A., Gregory, D., Patel, A. R., Levine, D., Venesy, D., Perry, K., Delano, C., & Konstam, M. A. (2009). A Multicenter Randomized Controlled Evaluation of Automated Home Monitoring and Telephone Disease Management in Patients Recently Hospitalized for Congestive Heart Failure: The SPAN-CHF II Trial, *Journal of Cardiac Failure, 1-8, doi:10-1016/j.cardfail.2009.12.012.*				**Grade level of Evidence**: Strong recommendation/high quality evidence
Hypothesis/ Question	**Design**	**Sample**	**Measurement**	**Results/Implications**
Assess incremental effect of automated system to measure and monitor transmitted information from heart failure patients	Prospective Randomized Investigation	188 consented patients, randomized between interventional and control groups. One group received heart failure disease management program.	Examine the endpoint regarding the relative admission rate between control and intervention groups	Short term results in heart failure hospitalizations rate were associated with the use of automated home monitoring equipment. Limitations: population not specific for African American males ages 18-50.

Appendix B

Georgia State University Department of Graduate Nursing Informed Consent

Title: Implementation of a post-discharge education intervention to reduce 30 day hospital readmission rates in African American males ages 18-50 with heart failure.

Principal Investigator: Susan Breslin, DNP RN NE-BC FACHE

Co-Investigator: David Markham MD

Student Principal Investigator: Fannie Diana Harton MSN RN RRT

I. Purpose:

You are invited to participate in a study. The purpose of this study is to see if an education program after discharge will reduce admissions to the hospital. You have been selected because you are an African American male between the ages of 18-50 with heart failure. A total of 60 men will be included in this study. It will require one hour of your time each week over a 90-day period after you have been discharged.

II. Procedures:

If you decide to participate, you will receive a phone call once a week from the student principal investigator (Fannie Diana Harton). During this call, you will be asked questions about any new admissions to the hospital and how you are caring for yourself. You will be asked about taking your medications, weighing yourself, and keeping a record of your blood pressure. We will also discuss any problems you are having with your medications, exercise and diet.

The phone calls will take up to one hour. They will begin after you are discharged from the hospital and for 90-days. The calls will be made by the student principal investigator (Fannie D. Harton).

III. Risks:

In this study, you will not have any more risks than you would in a normal day of life.

IV. Benefits:

Participation in this study may or may not benefit you personally. You may learn more about heart failure and how to care for yourself better. We hope to learn whether education after discharge can improve hospital readmission rates.

V. Voluntary Participation and Withdrawal:

Participation in this study is voluntary. You do not have to be in this study. If you decide to be in the study and change your mind, you have the right to drop out at any time. You may skip questions or stop participating at any time. Whatever you decide, you will not lose any benefits to which you are otherwise entitled. The weight scales and blood pressure monitor do not have to be returned at the end of the study or if you drop out, they are yours to keep at no cost.

VI. Confidentiality:

We will keep your records private to the extent allowed by law. The Principal Investigator, Co- Investigator and Student Principal Investigator will have access to the information you provide. Information may also be shared with those who make sure the study is done correctly (GSU Institutional Review Board, the Office for Human Research Protection (OHRP). Protected Health Information (PHI) that will be used consists of your name, date of birth, hospital discharge date, phone number, and diagnosis.

We will use a number code, not your name on study records. The information you provide will be stored in a locked file and protected. The number code used will be kept separate from any health information to protect your privacy. Your name and other facts about you will not appear when we present this study or publish the results. You will not be identified personally. After all data is compiled and a final report is completed; the code sheet key will be destroyed.

VII. Contact Persons:

Contact: If you have any questions, concerns, or complaints about this study you may contact Professor Susan Breslin at 404-413-1160 or Sbreslin@gsu.edu, or Fannie D. Harton at 678-499- 7771 or fharton1@gsu.edu. If you think you have been harmed by the study you can call Susan Vogtner in the Georgia State University Office of Research Integrity at 404-413-3513 or svogtner1@gsu.edu, if you want to talk to someone who is not part of the study team. You can talk about questions, concerns, offer input, obtain information, or suggestions about

the study.

You can also call Susan Vogtner if you have questions or concerns about your rights in this study.

VIII. Copy of Consent Form to Participant:

We will give you a copy of this consent form to keep.

If you are willing to volunteer for this research, please sign below

_____ _____

Participant Date

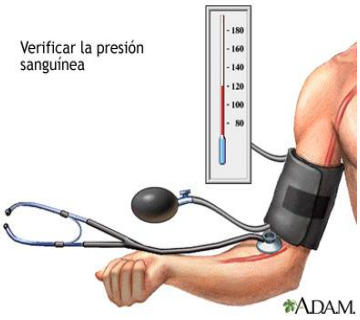
_____ _____

Student Investigator Obtaining Consent Date

Appendix C

Weekly Survey Questions for Participants

1. Have you had a hospital readmission since discharge?
2. Have you monitored your B/P at least once daily?
3. Have you exercised this week? Can you walk 100 yards?
4. Have you weighed daily? Have you gained more than 3 pounds overnight or more than 5 pounds in 1 week?
5. Have you logged and monitored your diet and fluid intake?
6. Have you eaten a low sodium diet?
7. Have you smoked any tobacco products?
8. Have you consumed any alcoholic beverages?
9. How often have you taken your meds as prescribed? What is the cost of your meds? Are you able to afford your meds?

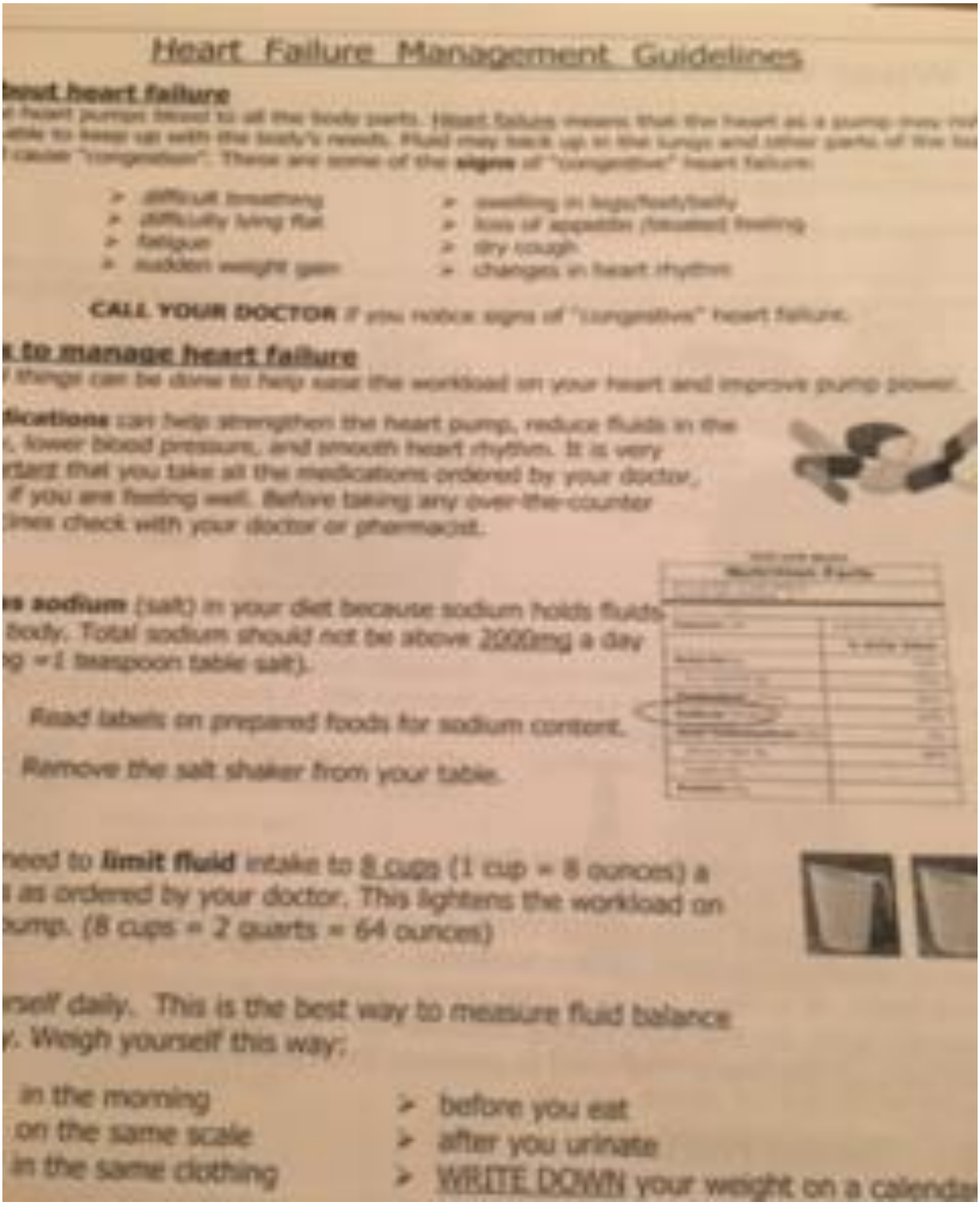


Appendix D

Study Group Weekly Education Re-enforcement Focus

1. Diet- restricted sodium
2. Fluid intake
3. Weight management
4. B/P
5. Exercise
6. Avoidance of tobacco products and alcohol
7. Medication Compliance
   a. Taking medications as prescribed/medication indications
   b. Any difficulty with medications/side effects
   c. Any difficulty purchasing medications

Appendix E



Heart Failure Management Guidelines

Heart failure

- difficult breathing
- difficulty lying flat
- fatigue
- sudden weight gain
- swelling in legs/feet/belly
- loss of appetite /bloated feeling
- dry cough
- changes in heart rhythm

CALL YOUR DOCTOR if you notice signs of "congestive" heart failure.

to manage heart failure

dications can help strengthen the heart pump, reduce fluids in the , lower blood pressure, and smooth heart rhythm. It is very rtant that you take all the medications ordered by your doctor, if you are feeling well. Before taking any over-the-counter ines check with your doctor or pharmacist.

s sodium (salt) in your diet because sodium holds fluids body. Total sodium should not be above 2000mg a day g =1 teaspoon table salt).

Read labels on prepared foods for sodium content.

Remove the salt shaker from your table.

eed to **limit fluid** intake to 8 cups (1 cup = 8 ounces) a as ordered by your doctor. This lightens the workload on ump. (8 cups = 2 quarts = 64 ounces)

self daily. This is the best way to measure fluid balance . Weigh yourself this way:

- in the morning
- on the same scale
- in the same clothing
- before you eat
- after you urinate
- WRITE DOWN your weight on a calenda

*Hospital's 12 page Heart Failure Education Guide

Appendix F

US version of the MLHF questionnaire.

LIVING WITH HEART FAILURE QUESTIONNAIRE

These questions concern how your heart failure (heart condition) has prevented you from living as you wanted during the last month. The items listed below describe different ways some people are affected. If you are sure an item does not apply to you or is not related to your heart failure then circle 0 (No) and go on to the next item. If an item does apply to you, then circle the number rating how much it prevented you from living as you wanted. Remember to think about ONLY THE LAST MONTH.

Did your heart failure prevent you from living as you wanted during

the last month by:

	No					Very little Very much
1. Causing swelling in your ankles, legs, etc?	0	1	2	3	4	5
2. Making you sit or lie down to rest during the day?						
3. Making your walking about or climbing stairs difficult?						
4. Making your working around the house or yard difficult?						
5. Making your going places away from home difficult?						
6. Making your sleeping well at night difficult?						
7. Making your relating to or doing things with your friends or family difficult?						
8. Making your working to earn a living difficult?						
9. Making your recreational pastimes, sports or hobbies difficult?						
10. Making your sexual activities difficult?						
11. Making you eat less of the foods you like?						
12. Making you short of breath?						
13. Making you tired, fatigued, or low on energy?						
14. Making you stay in a hospital?						
15. Costing you money for medical care?						
16. Giving you side effects from medications?						

17. Making you feel you are a burden to your family or friends?

18. Making you feel a loss of self-control in your life?

19. Making you worry?

20. Making it difficult for you to concentrate or remember things?

21. Making you feel depressed?

*permission granted to use MLHF Guide 12/2/2017, #2,378,845

Appendix G

*may not be the exact replica of instruments used

Appendix H

Timeline

Milestone	Description	Estimated Completion Date
Obtain GSU IRB approval	Approval by GSU IRB to begin the implementation phase of the study	Initial submission: May 31, 2017 incurred 5 returns for changes IRB approval granted: September 18, 2017 H17652
Begin implementation phase	Begin study: final check of study tools, final discussions with unit charge staff regarding study. Begin to recruit study participants.	Recruitment phase began November 27, 2017.
Discontinue recruitment phase		December 22, 2017
90 day post-discharge completion deadline	Date last participant that entered the study will receive a call.	March 8, 2018

Begin data analysis	Look at data entry, look for outliers, errors, and begin comparative studies between study participants and retrospective data.	March 9, 2018
Complete data analysis	Data analysis, comparative study, explanation of limitations, barriers, and implications.	March 14, 2018
Present final project paper to Project Team members		March 16, 2018
Defend project		March 29, 2018
Submit Dissemination Plan		April 13, 2018
Submit Final Project Paper		April 22, 2018
Complete IRB Closeout Form		May 2, 2018
Upload final paper to GSU Repository		May 5, 2018
Complete and send formal letters of thanks to Project Team		May 14, 2018

Appendix I

age

		Value
Standard Attributes	Position	2
	Label	age
	Type	Numeric
	Format	F2
	Measurement	Scale
	Role	Input
N	Valid	6
	Missing	0
Central Tendency and Dispersion	Mean	39.83
	Standard Deviation	5.776
	Percentile 25	37.00
	Percentile 50	38.50
	Percentile 75	42.00

All weekly calls complete

		Value	Count	Percent
Standard Attributes	Position	3		
	Label	all weekly calls complete		
	Type	Numeric		
	Format	F1		
	Measurement	Nominal		
	Role	Input		
Valid Values	2		6	100.0%

Compliance with meds

		Value	Count	Percent
Standard Attributes	Position	4		
	Label	compliance with meds		
	Type	Numeric		
	Format	F1		
	Measurement	Nominal		
	Role	Input		
Valid Values	0		3	50.0%
	2		3	50.0%

Compliance with diet/fluids

		Value	Count	Percent
Standard Attributes	Position	5		
	Label	compliance with diet/fluids		
	Type	Numeric		
	Format	F1		
	Measurement	Nominal		
	Role	Input		
Valid Values	0		3	50.0%
	2		3	50.0%

Ability to walk 100 feet without difficulty

		Value	Count	Percent
Standard Attributes	Position	6		
	Label	ability to walk 100 feet without difficulty		
	Type	Numeric		
	Format	F1		
	Measurement	Nominal		
	Role	Input		
Valid Values	0		3	50.0%
	1		1	16.7%
	2		2	33.3%

Difficulty obtaining meds

		Value	Count	Percent
Standard Attributes	Position	7		
	Label	difficulty obtaining meds		
	Type	Numeric		
	Format	F1		
	Measurement	Nominal		
	Role	Input		
Valid Values	0		3	50.0%
	2		3	50.0%

Complete MLHF pre-survey

		Value	Count	Percent
Standard Attributes	Position	8		
	Label	complete MLHF pre-survey		
	Type	Numeric		
	Format	F1		
	Measurement	Nominal		
	Role	Input		
Valid Values	2		6	100.0%

Complete MLHF post-survey

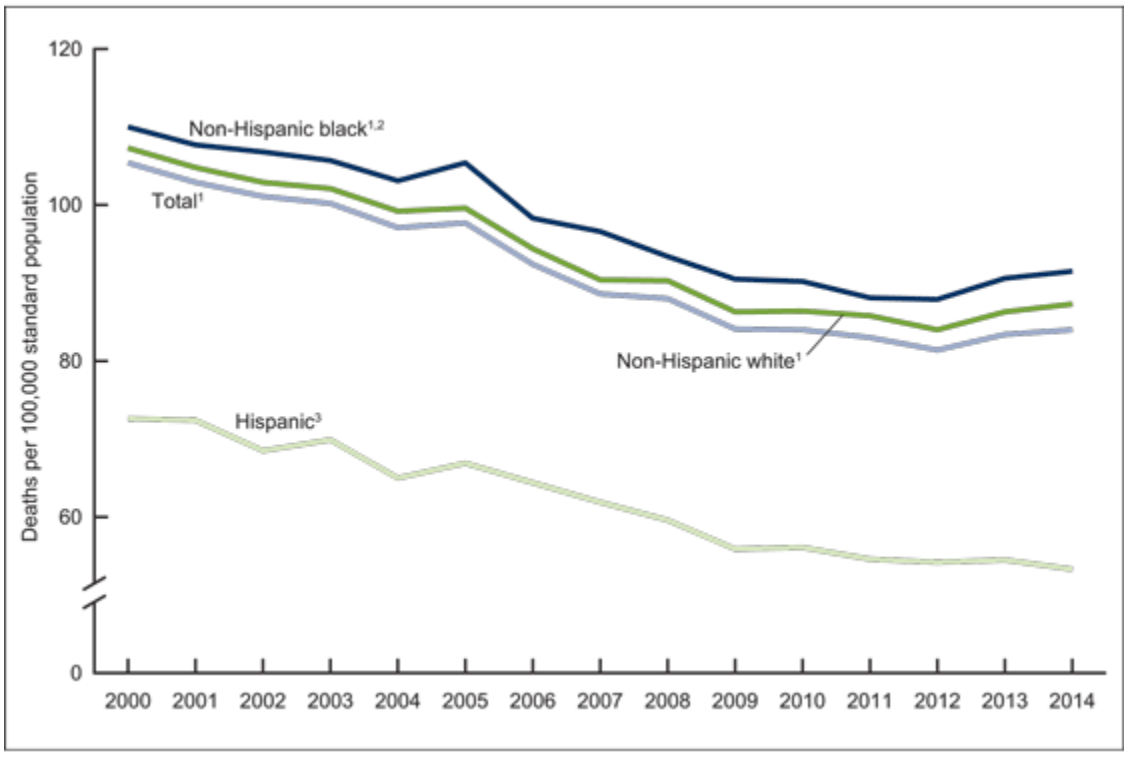
		Value	Count	Percent
Standard Attributes	Position	9		
	Label	complete MLHF post-survey		
	Type	Numeric		
	Format	F1		
	Measurement	Nominal		
	Role	Input		
Valid Values	2		6	100.0%

Appendix J

Frequency Table for Age

age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	33	1	16.7	16.7	16.7
	37	1	16.7	16.7	33.3
	38	1	16.7	16.7	50.0
	39	1	16.7	16.7	66.7
	42	1	16.7	16.7	83.3
	50	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

Appendix K

Age-adjusted rate for heart failure-related deaths, by race and Hispanic origin: United States, 2000–2014