January 2015

The Relationship Between Nurses' Emotional Intelligence and Patient Outcomes

Mary Kutash
University of South Florida, mkutash1@health.usf.edu

The Relationship Between Nurses' Emotional Intelligence and Patient Outcomes

by

Mary Kutash

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
College of Nursing
University of South Florida

Major Professor: Denise J Maguire, R.N., Ph.D., C.N.L.
Cecile A Lengacher, R.N., Ph.D., F.A.A.N.
Kevin Kip, Ph.D., F.A.H.A.
Robyn B Cheung, R.N., Ph.D.

Date of Approval:
June 19, 2015

Keywords: patient satisfaction, unplanned hospital readmissions,
Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS),
quality of care

Dedication

This work is dedicated to my incredible children who are the light of my life, my daughter Katherine Elizabeth Kutash and my son William Edward Kutash, for their understanding, love, encouragement, and at times sacrifice, throughout this journey. I am also so very grateful to my loving and wonderful family, my mother Irene Bogos, my brother Nicholas Bogos, my sister in law Krista Kutash and my brother in law Larry Schonfeld. They have always been there for me offering support and encouragement, especially in the most frustrating of times. I could not have done this without their love and support.

Acknowledgment

I would like to acknowledge my dissertation committee for their guidance and assistance in completing this work. I thank my committee chair Dr. Denise Maguire for her patience, support and guidance throughout this research. I thank Dr. Cecile A. Lengacher for her expertise in the dissertation process and grant writing. I am also thankful to Dr. Kevin Kip for sharing his expertise in research design and statistics, and Dr. Robyn Cheung for her clinical expertise and insight. I would also like to extend a special thanks to Janet Davis, Deana Nelson, and Kathy Katz for providing me the support that helped me to complete my doctoral degree. Finally, I would like to acknowledge the Southern Nursing Research Society and Tampa General Hospital for funding this dissertation.

Table of Contents

List of Tables

List of Figures

Abstract

Heart Failure readmissions (HFR) significantly contribute to all cause hospital readmissions rates. Current evidence on the effectiveness of interventions for reduction of HFR is inconclusive. Recent research suggests that nurses' emotional intelligence (EI) may be associated with better patient outcomes.

The purpose of this study was to examine if nurses' EI is significantly related to HFR and if that relationship is mediated through patient satisfaction with care. One hundred and thirty six Registered Nurses were recruited from 11 in-patient units at a large teaching hospital in the south eastern United States. Two surveys were mailed to eligible participants; the Bar-On Emotional Quotient Inventory 2.0 and a demographic survey. Patient satisfaction was measured with the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey. The unit of observation for the analysis of the current study was the individual nursing unit with monthly measures for 14 months. Nurses EI was assessed at a single point in time and served as the basis for the data collected.

Results of one-way ANOVA showed a non-significant small trend of higher total EI being associated with lower rates of HFR. The generalized estimating equation model was used to account for correlated observations and revealed a greater non-significant likelihood for higher total EI to translate to no HFR. Results of Pearson's correlations found non-significant positive correlations between nurses total EI and the patient satisfaction items of rate hospital, nurses' courtesy and respect, nurse listening, nurse explaining, and nurse communication. The linear mixed model to account for correlated observations showed small non-significant trends for total

nurse EI and all patient satisfaction items. Results of one-way ANOVA showed no association between patient satisfaction and HFR. When accounting for correlated observations, increases in total nurse EI were not significantly associated with the predicted odds of no HFR. In conclusion, the examination of the aims in this study demonstrated results that were in the expected direction but not at the level expected. The findings of this study indicate that there is a need to further examine how nurses' EI may influence patient outcomes.

Chapter One

Introduction

In 2001, the Institute of Medicine (IOM) issued its landmark report, "Crossing the Quality Chasm: A New Health System for the 21st Century." The report concluded that the health system of the United States (U.S.) failed to provide high quality medical care to all people and subsequently put forth ten rules to guide the redesign of health care in the U.S. These rules highlighted the need for transparency in healthcare and effective communication of information to patients in order to facilitate decision making regarding treatment, and selection of hospitals and health plans. In addition, the authors proposed that payment policies be aligned with quality improvement as a mechanism to change the health care environment (Institute of Medicine Committee on Quality of Health Care in America 2001).

Subsequent to the IOM report, the Centers for Medicare & Medicaid Services (CMS) established several initiatives intended to increase the quality of care of Medicare recipients. One of these initiatives is the Value Based Purchasing (VBP) program. This pay for performance approach makes incentive payments to hospitals based on achievement and improvement in quality indicators. CMS publically reports 30-day all-cause hospital readmission rates for Heart Failure (HF), Acute Myocardial Infarction (AMI), and Pneumonia with the intent to promote high quality of care. An unplanned hospital readmission is described as an admission that is related to a previous (index) admission that is considered to be reasonably preventable due to problems with quality of care during the index admission, discharge planning, and follow up

after discharge, and coordination with the transition of care between inpatient and outpatient health providers (Kocher & Adashi, 2011). The measure was chosen to encourage collaboration between hospitals and outpatient providers in efforts such as patient education, reconciliation of medications, and effective communication. In addition, the measure was chosen because patients perceive all-cause readmissions as adverse events (Quality Net, 2013).The VBP program also includes patient satisfaction, also known as patient experience, as a quality indicator (CMS, 2013).

Heart failure readmissions significantly contribute to 30-day-all-cause hospital readmissions (Jencks, Williams, & Coleman, 2009). Antecedents to HF readmissions include cardiac factors, noncompliance with medications, substance abuse, poor access to follow up care, inadequate transitions of care, and limited access to low sodium diets (Gheorghiade et al., 2013). Interventions in both inpatient and outpatient settings aimed to reduce HF readmissions are comprised of many components including patient education, discharge planning, medication reconciliation, follow up telephone calls, symptom monitoring, scheduling of follow up appointments prior to hospital discharge, and sodium restriction (Hansen, Young, Hinami, Leung, & Williams, 2011; Wakefield, Boren, Groves, & Conn, 2013). However, current evidence surrounding the effectiveness of these interventions is inconclusive (Assyag et al., 2009; Panella, Marchisio, Demarchi, Manzoli, & Di Stanislao, 2009; Delaney &Apostolidis 2010; Jain et al., 2010; Powell et al., 2010; Stauffer et al., 2011; Wang, Lin, Lee, & Wu, 2011).

There is emerging evidence that patient satisfaction with care may influence hospital readmissions. The survey used by CMS to measure patient satisfaction is the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) and is a part of the VBP program (CMS, 2013). As such, the instrument is increasingly being used to measure patient satisfaction

in empirical studies. One study found that higher overall patient satisfaction scores and higher discharge planning scores were associated with lower 30-day readmission rates for AMI, HF, and Pneumonia (Boulding, Glickman, Manary, Schulman, & Staelin, 2011). A second study reported that higher HCAHPS VBP scores were associated with lower readmission financial penalties (Ganey, 2012). While patient satisfaction is multifaceted, research has shown that nursing care is the strongest predictor of patient satisfaction with the overall hospital stay (Laschinger, Hall, Pedersen, & Almost, 2005). Authors have reported that patients in hospitals with better work environments as reported by nurses, were more likely to rate the hospital high and to recommend the hospital (Aiken et al., 2012; Kutney-Lee et al., 2009).

The influence of interpersonal characteristics of nurses on patient satisfaction is not well known. One study reported that the Communication with Nurses dimension of the HCAHPS survey positively influenced other dimensions of the measure (Ganey, 2013). A recent doctoral dissertation reported a direct, significant, and positive relationship between nurse manager emotional intelligence (EI) and patient satisfaction with nursing care (Munro, 2011). Higher nurse manager EI was associated with lower patient mortality (Cummings, Midodzi, Won, & Estabrooks, 2010). Another study demonstrated that nurses' EI had a direct effect on hospital services quality (Ezzatabadi et al. 2012).

Statement of the Problem

Patient readmissions to hospitals within 30 days of discharge are estimated to cost Medicare $15 billion each year, and HF is the greatest contributor (Gheorghiade et al., 2013). Despite intense efforts by hospitals to improve this outcome, annual rates declined minimally from 24.9% in 2008 to 24.6% in 2010 (Suter et al., 2012). Incentive payments began at the beginning of Fiscal Year 2013 and are based on the performance of hospitals from July 1, 2011

to March 31, 2012 (CMS, 2013). Data from CMS revealed that in 2013, 1557 hospitals will have received Medicare pay increases while 1427 hospitals will have experienced a 1% reduction in payment (Kaiser, 2012). Reductions in payment will increase incrementally to 2% in 2017 (Quality Net, 2013). Regardless of the significance of this problem, the effectiveness of interventions is conflicting, in part due to their complexity. Results of recent research suggest that nurses' EI may be associated with better patient outcomes and deserves further study (Cummings et al., 2010; Munro, 2011; Ezzatabadi et al., 2012).

Purpose of the Study

The purpose of this study was to examine if nurses' emotional intelligence (EI) is significantly related to the percent of 30-day all-cause readmissions for HF. The study also proposed to examine whether the relationship between nurses' EI and HF readmission rates is mediated through patient satisfaction.

Specific Aims and Hypothesis

This study has four aims and a hypothesis for each aim which are described below.

Aim 1. Examine the relationship between nurse EI and the percent of 30-day all-cause readmissions for HF by unit.

H1: There is a direct, significant inverse relationship between nurse EI and percent of 30-day all-cause readmissions for HF.

Aim 2. Examine the relationship between nurse EI and patient satisfaction with nursing care by unit.

H2: There is a direct significant positive relationship between nurse EI and patient satisfaction with nursing care by unit.

Aim 3. Examine the relationship between patient satisfaction with nursing care and percent 30-day all-cause readmissions for HF by unit.

H3: There is a direct significant inverse relationship between patient satisfaction with nursing care and percent 30-day all cause readmissions for HF by unit.

Aim 4. Examine the extent to which the hypothesized relationship between nurses' EI and HF readmission rates is mediated through patient satisfaction.

H4: The relationship between higher nurse EI and lower unplanned HF readmissions is influenced by higher patient satisfaction.

Definition of Relevant Terms

Unplanned hospital readmission: An admission that is related to the index admission considered to be reasonably preventable due to problems with quality of care during the index admission, discharge planning, follow up after discharge, and coordination with the transition of care between inpatient and outpatient health providers (Kocher & Adashi, 2011).

Emotional Intelligence: "a cross section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand others, relate with them and cope with daily demands" (Bar-On, 2006, p.13).

Patient Satisfaction with Nursing Care: Measure of a patient's or family's opinion of care received from nursing staff (American Nurses Association, 2013).

Voluntary RN turnover: The number of voluntary separations from employment during the month for RN's and advanced practice nurses divided by the number of employees (full time plus part time) on the last day of the month for RN's and advanced practice nurses (Forum, 2004).

Registered Nurses (RN) hours per patient day: The number of productive hours worked by RN's with direct patient care responsibilities per patient day for each in-patient unit in a calendar month. This measure is calculated by the number of productive hours worked by RN nursing staff (employee and contract) with direct patient care (Forum, 2004).

Significance to Nursing

Nurses comprise the largest number of health care providers (United States Department of Labor Bureau, 2013), and there is a growing body of evidence that supports the important role of nurses in transforming healthcare. Healthcare in the U.S. is moving toward pay for performance, and it is critical that nurse executives be able to objectively demonstrate the contribution that nurses make to patient outcomes in order to effectively advocate for the profession. Researchers need to study not only the structural characteristics of nurses such as education and staffing levels, but also the interpersonal and extra-personal characteristics in view of the nature of the nurse-patient relationship. This will offer a fuller understanding of the influence that nurses have on the patient outcomes such that strategies might be developed to improve the quality of patient care.

Chapter Two

Review of Literature

Review of the empirical literature begins with the conceptual framework and is subsequently organized according to the main variables of this study: nurses' EI, readmissions (HF, AMI, and pneumonia), and patient satisfaction with hospital care. Study limitations of each variable are included at the end of each section.

Conceptual Framework

The common framework that guides the evaluation of health care quality is the structure-process-outcomes framework, which suggests that good structure increases the probability of good processes which in turn increases the probability of good outcomes (Donabedian, 1968). Although this model was initially intended to assess medical care, it has also been used more broadly and is the framework used by the American Nurses Credentialing Center to evaluate nursing practice (Upenieks & Abelew, 2006). Structures are the characteristics of the setting that affect how care is delivered. Physical structure includes the presence or absence of facilities and equipment that are related to specific care functions. General organizational features are type of ownership, accreditation and affiliations, programs and partnerships. Staff organization includes certifications, formal education, number of staff related to the workload, experience and competency of staff and audits of staff performance. Fiscal and related aspects of the

organization refer to the source of payment. The final characteristic of structure is geographic which refers to the distance of the organization to the population that is served (Donabedian,1980). Processes are actions and behaviors that are done for patients. Screening procedures and case findings related to specific populations are evaluated. Diagnostic activities such as completeness and validation of information are key processes of care. Treatment is also a process of care within the model and includes preventative management and patterns of use and includes blood administration, drugs, and surgeries. The appropriateness and completion of consultations and referrals care, coordination, appropriate use of resources, and staff absenteeism and turnover are also fundamental processes (Donabedian, 1980).

According to the structure-process-outcomes framework, strong structures are the building blocks for good outcomes and exert their influence through processes of care. For example, appropriate nurse staffing may decrease nurse turnover which can improve patient outcomes. This framework has been used to enhance our understanding of how nurses influence hospital readmissions (McHugh & Ma, 2013), patient experiences with nursing services (Kobayashi, Takemura, & Kanda, 2011), and patient perspectives of their hospital experience (Tzeng, Hu, Yin, & Johnson, 2011).

The structure-process-outcomes conceptual framework for quality of healthcare was used for this study. The full model for this study is based on review of the empirical research (see Figure 1). This framework was used to examine the relationships between the variables in this investigation. In this framework, nurses' EI and Registered Nurse staffing are structure variables which reflect staff organization. The process variable is nurse turnover, and outcomes variables are unplanned readmissions for HF and patient satisfaction with care.

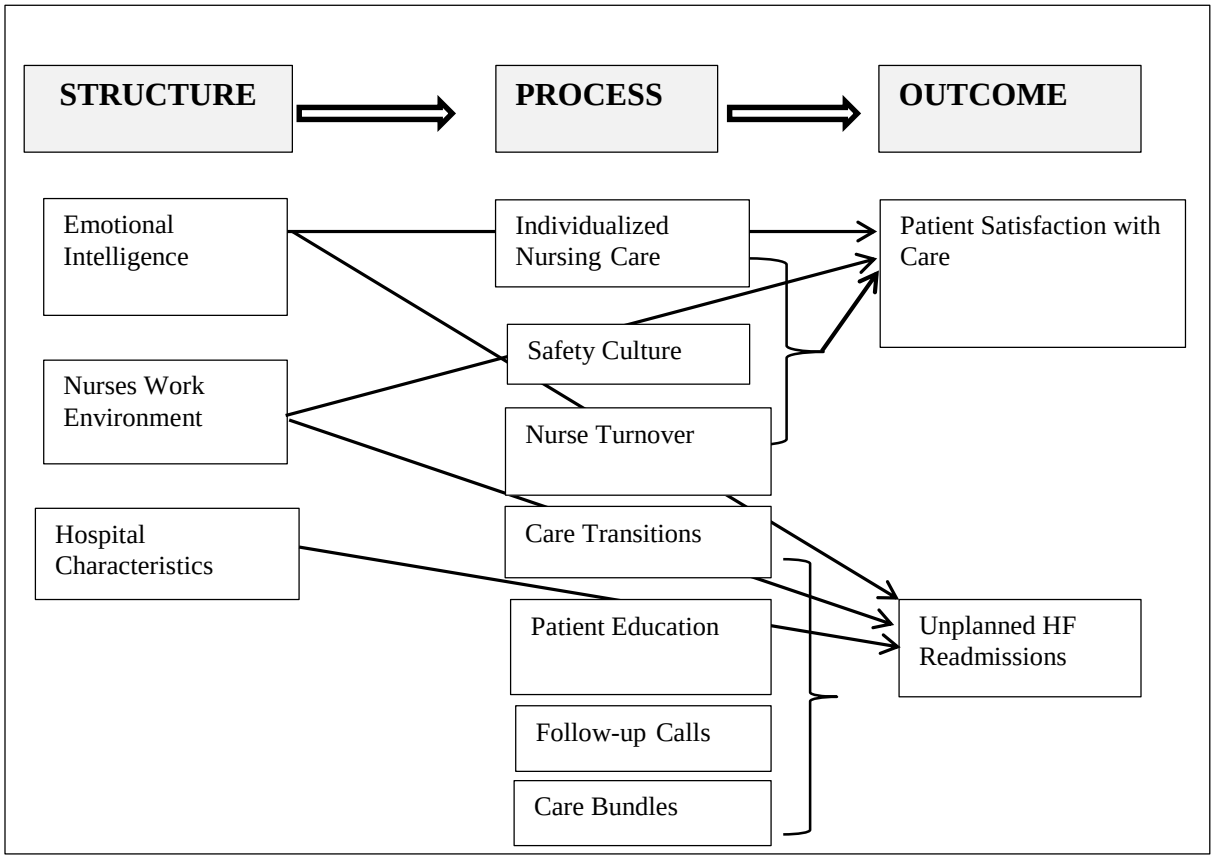

Figure 1. The Structure-Process-Outcomes model based on empirical research

Readmissions

Researchers who have conducted large scale studies of patients enrolled in Medicare have described differences in readmission rates by geographic location, race, and site of care. The lowest readmission rates for AMI were found in the northwest region of the U.S. while the highest rates were reported in the northeastern U.S. A similar pattern was reported for HF (Krumholz et al., 2009). Structural characteristics of hospitals were not associated with readmission rates in this study. After adjusting for hospital characteristics, hospitals in U.S. states, compared to those in U.S. territories, were found to have lower risk standardized

readmission rates for AMI, pneumonia, and HF. These differences were significant for pneumonia and AMI but not for HF (Nunez-Smith et al., 2011). Analysis of Medicare data has shown that racial disparities exist for readmission rates at the national level. African American males who were treated at hospitals with large minority populations were shown to have greater odds of 30-day readmissions for HF, AMI, and pneumonia compared to White patients who were discharged from non-minority serving hospitals (Joynt, Orav, & Jha, 2011)

Several studies have examined the influence of hospital characteristics on unplanned readmissions. Results from a recent study suggest that better (less intense) nurse workload and enhanced work environment may be important in reducing hospital readmissions. This study revealed that each additional patient added to the nurse's workload was related to greater odds of readmissions for patients with HF, AMI, and pneumonia. In addition, good work environment was associated with lower odds of readmission for all three diagnoses. However, no association was found between nurses' education and odds of readmission (McHugh & Ma, 2013). No association between hospital cost of care and readmission for HF and pneumonia was reported (Chen et al., 2010).

The relationship between patient perceptions of hospital care and unplanned readmissions is gaining attention among researchers. Greater hospital level scores for overall patient satisfaction and discharge planning were independently associated with lower risk standardized readmission rates for HF, pneumonia, and AMI (Boulding et al., 2011). A further study revealed that as patient satisfaction scores increased, financial penalties for readmissions decreased. However, this relationship was not found at the hospital level (Ganey, 2012). In another study, patient satisfaction with care was found to mediate the relationship between

patients' subjective health outcomes and readmissions among patients in Hong Kong (Wong et al., 2010).

Studies have reported types of patients who are at risk for readmissions. Findings have shown that risk factors include being an African American male (Silverstein, Qin , Mercer, Fong, & Haydar, 2008; Joynt et al., 2011), patients who have medical diagnosis, patients discharged to skilled nursing facilities, age greater than 75, and Medicare as the only insurance (Silverstein, et al., 2008). In addition, patients on medical surgical units with a poorer condition at the time of discharge were found to have greater odds of readmission compared to patients with better conditions at the time of discharge (Bradley, Yakusheva, Horwitz, Sipsma, & Fletcher, 2013).

Research that examined the effectiveness of interventions aimed to prevent readmissions demonstrates conflicting and inconsistent results. Most have studied programs that consisted of several components that were started during hospitalization and extended through post hospitalization. Patients who participated in a supplemental care bundle that focused on self-care experienced lower 30-day readmissions compared to patients who received standard care, however, the rates did not differ at 60 days (Koehler et al., 2009). Different amounts of self-care training were not shown to be beneficial (DeWalt, Schillinger et al., 2012). Although participation in a care transition program revealed a decrease in hospital readmissions at 30, 60 and 90 days, the relationship was only significant at 90 days (Parry, Min, Chugh, Chalmers, & Coleman, 2009). A more recent study also found that a care transition program led by advanced practice nurses decreased hospital 30-day readmission (Stauffer et al., 2011). Significantly lower rates of 30-day emergency department visits and hospital readmissions were also reported for patients who participated in an interdisciplinary intervention that consisted of individualized education and follow up telephone calls (Jack et al., 2009). Conversely, a cognitive intervention

that included audio recorded individualized patient education about simplifying tasks and prompts to initiate action did not demonstrate a difference in readmissions (Davis et al., 2012). Although discharge instructions and assistance with follow up appointments are frequently included in multi-component interventions, no association was found between documented discharge instruction and 30-day readmissions for patients with HF (Jha, Orav, & Epstein, 2009) or documentation of instructions for follow up appointments in general medical patients (Grafft et al., 2010).

Several limitations exist for studies of readmissions rates to care facilities. This topic has gained considerable interest due to the payment penalties associated with readmission rates for Medicare beneficiaries. This policy, therefore, has narrowed the focus of research in readmission rates to elderly patients who are a part of the Medicare fee for service program (Boulding et al., 2011; Chen et al., 2010; Krumholz et al 2009; Nunez-Smith et al., 2011; Parry et al., 2009). However, the sample in several studies was limited. One study that examined the effectiveness of an intervention on readmission rates did not include patients who were admitted to the hospital from nursing homes and skilled nursing units (Koehler et al., 2009). Many study designs did not account for readmissions to hospitals other than the study site (Bradley et al., 2013; Grafft et al., 2010; Jack et al., 2009; Stauffer et al., 2009). Limiting the sample may introduce biases to the study that make it difficult to generalize findings beyond the sample studied (Burns & Grove, 2005).

Overall, the majority of studies on this topic were correlational and therefore unable to demonstrate causality (Joynt et al., 2011; Krumholz et al., 2009; McHugh & Ma, 2013; Nunez-Smith et al., 2011; Stauffer et al.,2011). Numerous authors reported the lack of measurement or consideration of confounding factors in their studies (Bradley et al., 2013; Krumholz et al., 2009;

McHugh & Ma, 2013; Nunez-Smith et al., 2011; Wong et al., 2009) which may explain a portion of the variance in measurement of the variables under investigation (Burnes & Grove, 2005). A further limitation was the use of extant data sets that were not compiled soley for the purpose of the study (Boulding et al., 2011; Chen et al., 2010; Joynt et al., 2011; Krumholz et al., 2009; McHugh & Ma., 2013; Wong et al., 2010). Extant data bases need to be used with caution. They often lack quality control mechanisms and missing data are common. In addition, measurement and sampling errors are inherent and may lessen the internal validity of the findings (Burnes & Grove, 2005). Several studies were conducted in one setting (Bradley et al., 2013; Davis et al., 2012; DeWalt et al., 2012; Parry et al., 2009). It is possible that subjects were not representative of the target population which limits the ability to generalize the findings (Burnes & Grove, 2005). Researchers who examined the effectiveness of multi-component interventions reported decreases in readmissions; however, it was not possible to identify the individual effect or dose effect of the various interventions due to study design (DeWalt et al., 2012; Koehler et al., 2009; Parry et al., 2009). A small sample was used in one study (Koehler et al., 2009). A small sample size may limit the ability to detect differences that exist between the sample and the population (Haber, 2002).

Patient Satisfaction

Most of the recent studies surrounding patient satisfaction have used data from the HCAHPS survey of patient satisfaction. The majority of patients in U.S. hospitals have reported moderate to high levels of satisfaction with care and indicated that they would recommend the hospital to others (Jha, Orav, Zheng, & Epstein, 2008; Klinkenberg et al., 2011). In addition, patients who were treated at hospitals with better ratios of nurse to patient days were more likely to definitely recommend the hospital to others (Jha et al., 2009). The strongest predictors of

willingness to recommend the hospital to others reflected interpersonal aspects of care. These included courtesy and respect shown by nurses and doctors, nurses who listen carefully, and staff who did everything they could for pain relief. Cleanliness of the room and bathroom were also noted to be a strong predictor of willingness to recommend (Klinkenberg et al., 2011).

Patient perceptions of nursing satisfaction are similar among patients admitted for the first time and those who experienced previous hospitalizations (Oetker-Black & Petrochuk, 2012). Higher levels of education, older age, and patients who are White report better satisfaction (Klinkenberg et al., 2011; Schoenfelder, Klewer, and Kugler, 2011). Patient perceptions of satisfaction with hospital care vary between and within hospitals by race and ethnicity. A large scale study demonstrated that Non-Hispanic White patients used hospitals that provided better patient experiences for all patients compared to hospitals that were used more often by Hispanic, African American, Asian/Pacific Islander, and multiracial patients (Goldstein, Elliott, Lehrman, Hambarsoomian, & Giordano, 2010). Women in the U.S. have reported lower overall ratings for all HCAHPS measures with the exception of communication with doctors. These differences were greatest for communication about medicines, cleanliness of the environment and discharge information (Elliott et al., 2012). In contrast, gender was not associated with satisfaction reported by patients in German hospitals (Schoenfelder et al., 2011).

Characteristics of hospitals are also related to patient satisfaction. Safety net hospitals, those that serve higher numbers of patients who receive Medicaid and elderly patients who receive Supplemental Security Income, performed poorer on the measures overall ratings and willingness to recommend the hospital to others (Chatterjee, Joynt, Orav, & Jha, 2012). Overall hospital employee perceptions of the culture of safety have been associated with greater overall patient satisfaction. The strongest relationships in this study were teamwork within the units and

organizational-continuous improvement (Sorra, Khanna, Dyer, Mardon, & Famolaro, 2012). A study that explored nurse perceptions of hospital safety also reported lower satisfaction scores for the measures global rating and willingness to recommend the hospital to others (Aiken, et al., 2012). Similar findings were reported from hospitals in China and Europe (You, et al., 2013).

Hospital ownership plays an important role in patient satisfaction. Non-government owned organizations were found to have lower overall ratings in comparison to government-owned organizations (Sorra et al., 2012) while patients in private for profit hospitals reported less satisfaction compared to public not for profit and private not for private institutions (Jha, et al., 2008). There were no differences related to teaching status (Jha et al., 2008; Sorra et al., 2012); however, higher satisfaction was associated with smaller hospitals (Sorra et al., 2012).

The relationship between patient satisfaction with hospital care and nurses' perceptions of the hospital work environment is gaining interest. Several large scale studies have used cross-sectional data. The quality of the nurse work environment in U.S. hospitals was found to be positively associated with all HCAHPS measures (Kutney-Lee et al., 2009) and with higher global ratings in hospitals in Europe and China (Aiken et al., 2012; You et al., 2013). Two studies reported similar results for the measure willingness to recommend the hospital (Kutney-Lee et al., 2009; Aiken et al., 2012). However, findings from a study of hospitals in China reported no association (You et al., 2013). Better nurse staffing is related to greater global ratings of patient satisfaction and willingness to recommend the hospital (Kutney-Lee et al., 2009; Aiken et al., 2012) and with greater satisfaction with nurse communication (Kutney-Lee et al., 2009) communication about medications (Zhu et al., 2012), help received as soon as wanted (Kutney-Lee et al., 2009), nurses' responsiveness to call lights (Zhu et al., 2012), quietness at night and provision of discharge instructions (Kutney-Lee et al., 2009). Hospitals in China and

Europe with greater numbers of nurses with bachelor's degrees in nursing reported greater global satisfaction scores and willingness to recommend the hospital to others (You et al., 2013). Another study examined patient satisfaction and work environment in critical care units. The authors found that better nurse perceptions of nurse manager leadership and ability were related to higher patient satisfaction (Boev, 2012). Nurses' perception of empowerment was not related to patient satisfaction (Purdy, Spence Laschinger, Finegan, Kerr, & Olivera, 2010).

Hourly nurse rounding on medical surgical units did not improve patient satisfaction with care (Gardner, Woollett, Daly, & Richardson, 2009). However, individualized nursing care was found to significantly enhance patient satisfaction in European hospitals (Suhonen et al., 2012). Finally, analysis of HCAHPS data revealed that in surgical patients, patient perception of pain control and their perception that staff did everything they could to manage pain was significantly related to higher global scores. Nurse and physician courtesy and respect were also measures that significantly influenced higher global ratings (Hanna, González-Fernández, Barrett, Williams, & Pronovost, 2012). A recent analysis demonstrated several dimensions on the HCHAPS that clustered together and included communication with nurses, pain management, responsiveness of hospital staff, overall rating, and communication about medication. Communication with nurses exhibited the strongest influence on each measure in this study (Ganey, 2013).

Limitations of studies examining patient satisfaction are similar to the limitations associated with studies of readmission rates to hospitals. Many studies included large cross-sectional analysis (Aiken et al., 2012; Goldstein et al., 2010; Hanna et al., 2010; Jha et al., 2008; Jha et al., 2009; Klinkenberg et al., 2011; Kutney-Lee et al., 2009; Oetker-Black & Petrochuk, 2012; Suhonen et al., 2012; You et al., 2013). Because the designs were cross-sectional, the authors were not able to demonstrate causality (LoBiondo-Wood & Haber, 2002). The influences

of confounding factors such as co-morbidities and hospital characteristics were also not controlled in the few intervention studies that were reported (Gardner et al., 2009; Suhonen et al., 2012) resulting in the inability to explain a portion of the variance in measurement of the variables under investigation (Burnes & Grove, 2005).

The one prospective study conducted did not randomize subjects (Garder et al., 2009), thus increasing the risk of bias (Burnes & Grove, 2005). A further limitation in these studies is the use of extant data sets that were not created soley for the purpose of the studies (Boev, 2012; Jha et al., 2009). Sampling and measurement errors are inherent in extant data bases and may decrease the internal valididty of findings. They often lack quality controls procedures and missing data are common (Burnes & Grove, 2005). Additionally, several studies were conducted in a single setting (Boev, 2012; Hanna et al., 2012; Oetker-Black & Petrochuk, 2012) and may not be representative of the target population(Barnes & Gorve, 2005). A further limitation is low response rates (Elliot et al., 2012; Goldtein et al., 2010; Schoenfelder et al., 2011) that may limit the ability to generalize to the population of interest (Haber, 2002).

The use of convenience sampling was also a limitation in two studies (Purdy et al., 2010; Suhonen et al., 2012) resulting in little opportunity to control for biases that may occur when only people who volunteer for a study are included and characteristics of those not volunteering are analyzed and compared to those who volunteered (Burns & Grove, 2005). Finally, the use of intruments that were not tested for validity were used in two studies (Bove, 2012; Schoenfelder et al., 2011) and may have resulted in measurement error (Burnes & Grove, 2005).

Nurses' Emotional Intelligence

Nurses' EI has recently been studied in several contexts. The most common attributes of EI reported by nurses were empathy, problem solving, and emotional awareness (Codier,

Muneno, Franey, & Matsuura, 2010). Studies have demonstrated that the mean score of nurses' EI was within the average range and overall, does not differ by age, specialty, level of education, or gender (Codier, Kamikawa, Kooker, & Shoultz, 2009; van Dusseldorp, van Meijel, & Derksen, 2011; Harper & Jones-Schenk, 012). A study of nurses' EI in the Netherlands demonstrated higher EI means scores of mental health nurses compared to the general population (van Dusseldorp et al., 2011).

Nurses who reported high levels of EI indicated that they engaged in more ethical behavior (Deshpande & Joseph, 2009). In addition, higher EI among clinical nurses has been shown to play a role in organizational justice, especially in regard to interpersonal and informational aspects of relationships (Di Fabio & Palazzeschi, 2012). One study reported that EI is important to the ability of mental health nurses to provide therapeutic talk-based therapy (Hurley, 2012). Studies have suggested that emotion regulation has a positive influence on group cohesiveness (Quoidbach & Hansenne, 2009) and that the EI level of team leaders enhances team empowerment, and teams that are more proactive (Erkutlu & Chafra, 2012). Higher EI scores of clinical staff nurses was found to be related to job retention, longer careers, and participation in clinical ladder programs (Codier et al., 2009). There is a positive relationship between nurse reports of self-compassion and EI (Heffernan, Quinn Griffin, McNulty & Fitzpatrick, 2010). Higher nurse EI was associated with less burnout and lower levels of stress (Görgens-Ekermans & Brand,2012), and nurses who participate in training components of EI report less situational anxiety (Nooryan, Gasparyan, Sharif, & Zoladl, 2012). In addition, the ability to regulate emotion was associated with less confrontational anxiety (Jones & Argentino, 2010). Nurses' EI was associated with patient falls, infections, and pressure ulcer screenings (Kelly & Iseler, 2014). To a lesser extent, studies have examined the EI of nurse managers. Peer

coaching was found to increase nurse managers EI perceptions of their EI, however, coaching did not affect actual scores (Codier et al., 2011). Nurse Manager EI was found to be related to patient satisfaction (Munro, 2011). Finally, lower patient mortality was shown to be related to high-resonant nurse manager leadership style (Cummings et al., 2010).

There are several limitations in the studies of levels of nurse EI that may limit the ability to generalize findings from these works. Most of the study designs were descriptive and correlational (e.g., Cummings et al., 2002010; Heffernan et al., 2010; Munro, 2011; Nooryan et al., 2012; van Dusseldorp et al; 2011), and therefore unable to demonstrate causal relationships among variables (LoBiondo-Wood & Haber, 2002). Many studies used small samples (Codier et al., 2011; Jones & Argentino, 2010; Quoidbach & Hansenne, 2009) that may limit the ability to generalize to the population of interest and in fact may be different than the population of interest (Haber, 2002). Two studies used extant data sets that were created for purposes other than the study (Cummings et al., 2010; Munro, 2011). In addition, measurement and sampling errors are inherent as they are usually administrative data bases and not research data bases and thus may lessen the internal validity of the findings (Burns & Grove, 2005).

A further limitation in this group of studies is the use of questionnaires with poor psychometric properties (Codier et al., 2011; Quoidbach & Hansenne, 2009) resulting in the possibility of measurement error (Burnes & Grove, 2005). Finally, several studies were retricted to a single setting (Görgens-Ekermans, & Brand, 2012; Quoidbach & Hansenne, 2009) and a single geograhic location (Codier et al., 2011; Harper & Jones-Schenk, 2012; Heffernan et al., 2010). Limiting the sample in this way in setting and location may introduce biases that make it difficult to generalize findings beyond the sample studied (Burns & Grove, 2005). Finally, one study (Davis et al., 2012) used an instrument that had no support for its validity. Lack of

reliability and validity testing on instruments may result in measurement error (Burns & Grove, 2005). Despite limitations in the research base surrounding the level of EI in nurses, recent findings do suggest that EI is an important characteristic of nurses that needs to be further explored, especially in the context of patient and nurse outcomes such as unplanned readmissions, patient satisfaction, and burnout among nurses.

Summary

Limited progress has been made in reducing unplanned hospital readmissions. Effectiveness of interventions reveals conflicting findings. Unplanned hospital readmission rates vary by age, race, location and site of care. Structural characteristics of hospitals influence unplanned readmissions and include nurse staffing and perceptions of the nurse work environment. Emerging evidence supports the association among patient satisfaction and unplanned readmissions. Patient satisfaction with hospital care also varies by age, race, and ethnicity. Structural characteristics also influence patient satisfaction and are similar to those that affect unplanned hospital readmissions. The strongest predictors of willingness to recommend the hospital to others reflect interpersonal aspects of care. Nurses EI has been shown to be associated with less burnout, greater self-compassion, better teamwork, greater ethical behavior, and improved work retention. In addition, nurse manger EI is related to patient satisfaction.

Examining the relationship between nurses' EI, patient satisfaction and unplanned hospital readmissions is a new approach to the study of unplanned hospital readmissions. Gaps in knowledge remain concerning the effectiveness of interventions in reducing unplanned readmissions. Interventions are often overlapping, and therefore, it is difficult to examine individual contributions in multi-component strategies. The multi-component strategies require strong collaborative relationships across care settings. This is especially hard for those

organizations that are not part of an integrated healthcare system. Studies have suggested that emotion regulation, the ability of an individual to respond to a wide range of emotions, has a positive influence on group cohesiveness (Quoidbach & Hansenne, 2009). Results also suggest that the EI level of team leaders enhances team empowerment, and that teams are more proactive (Erkutlu & Chafra 2012). This study will examine the problem of unplanned readmissions with a new approach that will focus on nurses, the largest group of healthcare providers.

Chapter Three

Methods

This chapter presents the study methods. It is organized by the following sections: design, setting, population and sample, measures, procedures and data analysis. The purpose of the study was to examine if nurses emotional intelligence (EI) is significantly related to the percent of 30-day all-cause readmissions for HF. The study also examined whether the relationship between nurses' EI and HF readmission rates is mediated through patient satisfaction.

Design

The study design was cross-sectional. This design is indicated for studies that explore data at a single point in time (LoBiondo-Wood, Haber, Cameron, & Singh, 2005).

Population and Sample

The target population consisted of 11 in-patient units nursing units at Tampa General Hospital (TGH) that discharge patients with HF and participate in the HCAHPS survey. The study site has a structured program in place to prevent HFR. Such programs were not in place for the index diagnoses of Acute Myocardial Infarction and Pneumonia. Therefore, these diagnoses were excluded. The diagnostic codes used in this study were 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 428.0, 428.1, 428.20, 428.21, 428.22, 428.23, 428.30, 428.3, 428.31, 428.32, 428.33, 428.40, 428.41, 428.42, 428.43, and 428.9. The recruitment goal for this study was 472 RN's who are employed across these units. Inclusion criteria for RN's for study enrollment was: part-time or full-time status; provide direct patient care 50% of their time

and; tenure on the unit between March 1, 2013 and April 30, 2014 and have not participated in formal training in the elements of EI since March 2013. Potential participants were recruited from the following units: 6C1 (Acute Care Elderly Unit); 8A (Transplant Unit); 2H (Medical-Surgical Unit); 5A2 (Cardiac Telemetry Unit); 3H (Cardiovascular Surgical Telemetry Unit); 8C (Trauma-Surgery Unit); 5C1 and 5C2 (Cardiovascular Intensive Care Unit); 8 and 9 F (Adult Primary Care Unit); 6A (Medicine Unit); 7C (Oncology Unit); and 4F (Adult Step-down Unit). The nursing roles that were excluded included: nurse managers; advanced practice nurses; case managers; per diem status; transplant coordinators; divisional educators; nurse specialists; director of nursing; vice presidents of nursing; and research nurses. Approximately 472 RN's were eligible to participate in this study. At least 168 responses were expected to be received (Shih & Fan 2008; Denscombe, 2009).

Measures

Emotional intelligence. Level of emotional intelligence in nurses was measured using the Bar-On Emotional Quotient Inventory 2.0 (EQ-i 2.0; MHS, 2013; Bar-On, 2004), a revision of the Emotional Quotient Inventory (EQ-i; Bar-On, 2004). Numerous studies have supported the psychometric properties of the EQ-i and the EQ-i 2.0 and because the EQ-i 2.0 has built upon the empirical work of the EQ-i, the investigation of the validity and reliability of both scales are described below.

Emotional Quotient Inventory (EQ-i). The normative sample of the original version of the EQ-i was comprised of 3,831 individuals from the United States and Canada ranging in age from 16 to 100 (mean 34.3 years) with equal number of females and males (51% females and 49% males) (Bar-On, 2006). The version of scale normed on this sample contains 133 items, the same number of items as the most recent version, but had slightly different item anchors (e.g., 1=

very seldom or not true of me and 5 = very often true of me or true of me). The subscale titles also were slightly different than the current version with the five subscales labeled (a) intrapersonal, (b) interpersonal, (c) stress management, (d) adaptability, and (e) general mood. Higher scores on the EQ-I indicate higher emotional intelligence (Stough, Saklofske, & Parker, 2009). Numerous studies have supported the reliability of the original version of the EQ-i. The internal consistency coefficient for the scale has been found to be adequately high (alpha =.97), and moderate (alpha = .50) for the composite scales (Bar-On, 2006). Overall test-retest reliability of the EQ-i at 6 months has been acceptable for females (r = .80) and for males (r = .72) (Bar-On, 2006).

Validity of the EQ-i has been supported through examining the factor structure of the scale and through divergent and confirmatory construct analyses. The results of a confirmatory factor analysis using 3,831 individuals supported a 10 factor structure (Bar-On, 2006) aligning with the thoeroical underpinnings of the constuct. To support the divergent validity of the EQ-i, EQ-i scores were compared to constructs hypothesized not to be correlated with Emotional Intelligence. As reported by Bar-On, (2006), the correlation between the EQ-i and the Wechler Intelligence Scale was low (r = .12) and with the General Adult Mental Ability Scale (r = .08). Stough et al. (2009) reported moderate-to-high correlations between the EQ-i and the Beck Depression Inventory (r = -.56), and between the EQ-I and alexithymia (r= -.72).

The convergent construct validity of the EQ-i has also been supported. Correlations between the EQ-i and other measures emotional intelligence such as the Trait Meta Mood Scale and the Emotional Intelligence Scale have found moderate correlations of (r =.58) and (r= .56) respectively (Bar-On, 2004).

The predictive validity of the EQ-i has also been supported. The correlation between the EQ-i and physical health was moderate (r = .49) as was the correlation between the EQ-i and psychological health (r = .39). The correlation between the EQ-i and social interaction was high (r = .69) as was the correlation between the EQ-i and performance in the workplace (r= .82) (Bar-On, 2006).

Emotional Quotient Inventory 2.0 (EQ-i 2.0). The EQ-i 2.0 is a self-report instrument comprised of 133 items rated on a five point scale ranging from 1 (never/rarely) to 5 (always/almost always) with higher scores indicating higher emotional intelligence. A total EQ-i 2.0 score is provided as well as scores for each of the five subscales or competencies: (a) self-perception, (b) self-expression, (c) interpersonal, (d) decision making, and (e) stress management (MHS, 2013). The normative sample for the EQ-i 2.0 consisted of 4,000 individuals living in the United States (90%) and Canada (10%) and is representative of the general population in North America as they closely match the US Census data in regard to race, ethnicity, educational level, and graphic region distributions (MHS, 2013).

To investigate the reliability of the EQ-i 2.0, internal consistency and test-re-test reliability estimates were calculated and compared to the reliability estimates of the original version of the scale. Using the data from the normative sample, the Cronbach's alpha was .97 for the total scale while the alpha values for the five composite scales ranged .88 to .93 (MHS, 2013). These values were greater than those found on the original EQ-i (MHS 2013).

Test-retest reliability for the EQ-i 2.0 was evaluated on 204 individuals who were administered the instrument twice about two to four weeks apart and for 108 individuals who were administered the scale twice with an eight week delay separating the administrations. Test-retest correlations on the total score at 2 to 4 weeks were high (r = .92) and higher than for the

original version of the scale, and still acceptably high (r = .81) on the for 8-weeks apart investigation. The test re-tests correlations for 2 to 4 week analyses for the composite scales were high (r = .86) for Self Expression composite to r = .91 for Interpersonal composite (MHS, 2013). The test re-test correlations for the 2 to 4 week analysis of the subscales were also high (r = .78) for the Impulse Control subscale (r = .89) for the Empathy subscale (MHS, 2013). Similarly, test re-test correlations were high for the 8 weeks apart analysis (r = .70) for the Flexibility subscale, and (r = .84) for the Self-Regard, Happiness subscale (MHS, 2013). Overall, investigations of the internal reliability estimates along with the test re-tests results support the reliability of the EQ-i 2.0 (MHS, 2013).

To support the validity of the EQ-i 2.0, the scores from the normative sample were explored using factor analysis. The normative sample was split equally to conduct both an Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Five exploratory EFA's were performed and items within each composite subscale were analyzed individually. In each EFA, a three factor solution was concluded to be the most appropriate (MHS, 2013). Six models were tested on the confirmatory subsample of the instrument. All Goodness of Fit Indices for the composite scales were greater than .90 and all RMSEA values were less than .10 suggesting adequate fit for the models (MHS, 2013).

Relationships between the EQ-i 2.0 and other psychological instruments have been examined in order to further evaluate its validity. The Social Skills Inventory (SSI; Riggio & Carney, 2003) assesses social communication skills. The scales two domains, emotional and social, capture the sensitivity, expression, and control aspects of communication. This instrument has six subscales: (a) emotional expression, (b), emotional sensitivity, (c), emotional control, (d) social expression, (e) social sensitivity, and (f), social control. These subscales are collapsed into

Total Emotional, Total Social, Total Expression, Control, and Sensitivity scales (Riggio & Carney, 2003). There was a positive and statistically significant correlation between the total EQ-i 2.0 score and total SSI score (r = .54), which further supports construct validity. All subscales of the EQ-i2.0, with the exception of impulse control, correlated significantly with the SSI Total score. In addition, the EQ-i 2.0 total score demonstrated significant positive correlations with most of the SSI subscales (MHS, 2013). These findings support the assumption that higher EI is related to better social skills.

The relationship between the Five-Factor Model of personality, measured with the NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992), and the EQ-i 2.0 has also been reported as these concepts share similar attributes such as association with job performance. The personality traits of the Five- Factor Model are (a) neuroticism, (b) conscientiousness, (c) openness to experience, (d) agreeableness, and (e) extraversion. Significant negative correlations have been reported between the total EQ-i 2.0 score and all subscales of the NEO-FFI with the exception of openness to experience subscale. A significant negative correlation with neuroticism was found as expected (r = - .71) (MHS, 2013). These findings suggest that EI and personality are distinct concepts.

Finally, the relationship between the EQ-i 2.0 and another measure of EI, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) (Mayer et al., 2004) was examined. The MSCEIT is a 141-item ability-based measure of EI, in contrast to the EQ-i 2.0 which is a trait-based measure. The correlation between the total scores of both instruments was low and non-significant (r = .12) (MHS, 2013). The majority of correlations between the MSCEIT branch scores and the EQ-i 2.0 composite and subscale scores were non-significant (MHS, 2013). These findings support the premise that the two models conceptualize EI differently.

Patient satisfaction. Patient satisfaction was measured using the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey (CMS, 2013). This is a standardized survey instrument and data collection process that measures patients' experiences of their hospital stay. The survey is administered at the study location by a private vendor to a random sample of patients 48 hours to 6 weeks after discharge. There is a total of 32 items on the survey and multiple questions are clustered into 8 composite measures: (a) your care from nurses (four items); (b) your care from doctors (three items); (c) the hospital environment (two items); (d) your experience in this hospital (eight items); (e) when you left the hospital (three items); (f) overall rating of the hospital (two items); (g) understanding your care when you left the hospital (three items); and (h) about you (7 items) (CMS, 2013). Composite scores and individual item scores on three of the scales (care from nurses, care from doctors, and the hospital environment) are rated on a four point summated rating scale that ranges from 1 (never) to 4 (always). Additionally, there are two global items on the survey: overall rating of the hospital and willingness to recommend the hospital. For the item, overall rating of the hospital, ratings can range from 0 (worst possible hospital) to 10 (best possible hospital). For the item, I would recommend this hospital, ratings can range from 1 (definitely no) to 4 (definitely yes) (CMS, 2013). An overall total score is not calculated from this survey.

Reports of the reliability and validity of the survey are sparse. Analysis of the HCAHPS pilot data on 16,619 surveys demonstrated high internal consistency for five of the six composites with alpha coefficients ranging from .80 to .88 (AHRQ, 2003). Among the six composites, communication with nurses accounted for 50% of the variance in overall hospital rating and for 38% of the variance in willingness to recommend (AHRQ, 2003). A subsequent analysis was conducted by Press Ganey (2010). This study included a sample of 567,567 surveys

completed in the first quarter of 2005. Factor analysis revealed that 73% of the total variance in responses was accounted for by 9 factors. The alpha coefficients between each item and the total subscale score ranged from .77 to .95, thus supporting the internal consistency and reliability of the subscales. Finally, internal consistency of the entire instrument was estimated with an alpha coefficient of .97 (Ganey, 2010). It should be noted, however, that the psychometric testing of the survey has been conducted by the proprietor of the survey. The composite measure Nurses Communication "Your care form nurses" and overall rating of the hospital was measured in this study.

Unplanned HF readmissions. Unplanned HF readmissions was reported as percent 30-day all cause readmissions. This variable was measured as the number of patients who were readmitted to the hospital within 30 days after being discharged from the initial hospital stay divided by the total number of the patients who were admitted for the diagnosis. This measure was calculated on a monthly basis.

Registered Nurses (RN) Hours per patient day. This measure was the number of productive hours worked by RN's with direct patient care responsibilities per patient day for each in-patient unit in a calendar month. This measure was calculated by the number of productive hours worked by RN nursing staff (employee and contract) with direct patient care responsibilities divided by inpatient days (Forum, 2004).

Nurse turnover. Total turnover was the number of separations from employment during the month for RN's and advanced practice nurses divided by the number of employees (full time plus part time) on the last day of the month for RN's and advanced practice nurses (Forum, 2004).

Demographic Survey. The demographic data for all participants included: (a) unit worked, (b) years' experience as an RN, (c) length of time on the current unit (d) has the participant discharged a patient with HF within the past year, (e) highest level of education achieved, (f) highest level of nursing education achieved, (g) age range, (h) gender, (i) race, and (j) ethnicity, (k) race, (l) marital status, (m) number of hours worked per week, (n) work status, (o) shift most frequently worked, and (p) English as native language.

Procedures

Approval to conduct the study was granted from the study site and from the University of South Florida Institutional Review Board (IRB). After IRB approval, the investigator explained the study at unit meetings and an IRB approved flyer that explains the study was posted in the staff lounges on the eligible units A list of the names and home addresses of eligible RN's was obtained from the department of Human Resources. Two surveys were mailed to eligible participants: the EQ-iV2.0 and a demographic survey. A return self-addressed stamped envelope was also included. Each survey included an identification number that linked nurses EI scores, patient satisfaction scores, and readmission rates at the unit level. Participants were asked to complete and return the survey within three weeks. A reminder email was sent via the institution's intranet two weeks after the initial mailing. A waiver of documented informed consent was granted as the survey was minimal risk. However, an introduction letter that explained the study and contained the required elements of informed consent was included with the survey. Completion and return of the survey implied informed consent.

Hospital data were requested after IRB approval. Monthly readmissions and HCAHPS scores for each unit were obtained from the hospital department of Decision Support. RN direct

hours worked per patient day and RN turnover rates for each unit were obtained from a hospital system-wide data base. All data were requested for March 1, 2013 to April 30, 2014.

Data analysis

The estimate of statistical power was based on the linear mixed model that follows the analysis of Aims 1-3. For this analysis, the estimated correlation within multiple measurements of HF readmission rates per nursing unit is assumed to be 0.60 (e.g. a high correlation). With 154 observations available for analysis (see below), 2-sided type I error rate of 0.05, and 2 covariates that explain 15% of the variation in the dependent variable (i.e. HF readmission), the sample will be able to detect an R-squared value of 0.062. This corresponds to a "small" partial correlation coefficient of 0.25. Thus, the sample size will be adequately powered to detect relatively small effects of nursing unit-level factors (e.g. nurse EI) independently associated with 30-day rates of readmissions for HF. Data were analyzed at the nursing unit level using the Statistical Package for Social Sciences (SPSS).

For this study, the unit of observation for analysis was the individual nursing unit with monthly measures for 14 months year. Eleven (11) nursing units were included in the analysis for a total sample size of 154 observations (i.e. 11 x 14 = 154). Nurse's EI was assessed at a single time point in 2014 using an instrument that is based on the Bar-On mixed model (trait and ability) of EI and was used as the basis of the analysis for the data collected in 2013: patient satisfaction, unplanned readmission, voluntary turnover, and RN hours worked per patient day. The institution has not conducted education or training aimed at enhancing nurse's EI, therefore, the measure was considered stable for this analysis.

Aim 1. Examine the relationship between nurse EI and the percent of 30-day all-cause readmissions for HF. H1: There is a direct, significant inverse relationship between nurse EI and

percent of 30- day all-cause readmissions for HF. The strength of association between monthly nursing unit rates of 30-day all-cause readmissions for HF and average nurse EI scores (average per nursing unit) will be estimated by Pearson correlation. The 95% confidence interval for the Pearson correlation coefficient will be corrected for the multiple observations per nursing unit (i.e., 12 monthly observations, and hence, within nursing unit correlation). If the corrected 95% confidence interval does include the null value of 0.0, then the result will be considered statistically significant at the $p < 0.05$ level.

Aim 2. Examine the relationship between nurse EI and patient satisfaction with nursing care by unit. H2: There is a direct significant positive relationship between nurse EI and patient satisfaction with nursing care by unit. The analytic approach for this aim is the same as for Aim #1 with the exception of substitution of monthly nursing unit patient satisfaction scores for rates of 30- day all-cause readmissions for HF.

Aim 3. Examine the relationship between patient satisfaction with nursing care and percent 30-day all-cause readmissions for HF by unit. H3: There is a direct significant inverse relationship between patient satisfaction with nursing care and percent 30-day all cause readmissions for HF by unit. The analytic approach for this aim is the same as for Aim #1 with the exception of substitution of monthly nursing unit patient satisfaction scores for EI scores. As a follow-up to Aims 1-3, a primary analytic goal is to estimate the independent effect of nursing unit level variables on monthly rates of 30- day all-cause readmissions for HF. To achieve this, a linear mixed model will be fit with 30-day rates of all-cause readmissions for HF as the dependent variable. Potential independent variables will be examined in a forward stepwise manner including nursing unit EI and patient satisfaction scores, nurse turnover, and Registered Nurses (RN) Hours per patient day RN direct care hours per patient day. An autoregressive

correlation structure will be specified for the mixed model to account for multiple (monthly) outcome measurements per nursing unit, postulating that measurements closer in time (months) will be more similar in value than measurements more dispersed in time.

Aim 4. Examine the extent to which the hypothesized relationship between nurse's EI and HF readmission rates is mediated through patient satisfaction. H4: The relationship between higher nurse's EI and lower unplanned HF readmissions is influenced by higher patient satisfaction. For this aim, the goal is to examine whether the hypothesized relationship between nurse's EI and 30-day HF readmission rates is mediated through patient satisfaction scores from the nursing unit. Thus, nurse's EI will serve as the primary explanatory (predictor) variable hypothesized to have a direct effect on HF readmission rates, as well as an indirect effect that is mediated through reported patient satisfaction. Both the direct and indirect effects (paths) will be expressed (and compared) as standardized beta coefficients in regression modeling, including path analytic methods (Kraemer, 2001) and sequential regression techniques (Baron & Kenney, 1986).

Chapter Four

Findings

Findings of this study begin with a description of the sample, hospital unit characteristics, nurse demographics, and are followed with a discussion of the variables used in this study: (1) Nurses Emotional Intelligence, (2) Heart Failure readmission rates, (3) Patient satisfaction, and (4) Nurses work environment variables that include nurse turnover rates and RN direct care hours per patient day. These sections are followed by discussion of the findings according to each aim: (1) Examine the relationship between nurse EI and the percent of 30-day all-cause readmissions for HF, (2) Examine the relationship between nurse EI and patient satisfaction with nursing care by unit, (3) Examine the relationship between patient satisfaction with nursing care and percent 30-day all-cause readmissions for HF by unit, and (4) Examine the extent to which the hypothesized relationship between nurse's EI and HF readmission rates is mediated through patient satisfaction.

Sample

There are three types of participants (units of observation) for the current study: participating units, nurses employed on these units and patients served on these units. Each of these samples contributed variables to the current study. The participants will be described followed by the variables emanating from these samples.

Characteristics of the hospital units. Eleven of the in-patient nursing units from the 39 hospital units participated in this study. Table 1 describes the unit name, number of beds, rate of

length of stay in days ranged from 3.1 on the Short Stay Unit to 16.3 on the Adult Step-Down ICU Unit. The rate of readmissions from these units of patients initially admitted with a diagnosis of heart failure, and patient satisfaction scores were also used as major variables in the current study and are described below. Patient satisfaction surveys were completed by 3,293 patients discharged between March 1, 2013 and April 30, 2014 on these units. These patients provided the information for the five patient satisfaction outcomes variables and these variables are also described below of these patients, 204 accounted for more than one visit among the units included in this study and therefore completed more than one survey.

Table 1

Selected characteristics for participating hospital units (N=11)

Unit #	Unit Name	# of Beds	Rate of Turnover of RN Staff (1)	Ave Registered Nurses (RN) Direct Care Hours per Patient Day (2)	Ave Unit Length of Stay in Days
1	Acute Care for the Elderly	31	6.05	5.7	5.6
2	Transplant Unit	43	35.46	6.4	7.9
3	Short Stay	32	24.46	6.4	7.9
4	Cardiac Telemetry	56	11.86	6.0	5.41
5	Cardiovascular Telemetry	40	34.33	5.6	8.4
6	Surgery Trauma	47	16.72	5.6	6.3
7	Primary Care	36	14.24	5.7	8.2
8	Coronary Care ICU	18	21.77	13.5	7.6
9	Surgical Oncology	45	13.28	5.9	4.7
10	Complex Medicine	48	8.87	5.9	6.3
11	Adult ICU Step Down	18	3.45	8.5	16.3

(1) This variable is further delineated in Table 7 in Appendix A
(2) This variable is further delineated in Table 8 in Appendix A

Nurses' demographics. One hundred and thirty six of the 472 nurses employed on these units responded to the study designed survey for a response rate of 28.8%. The percent of responses was highest on the Acute Care for the Elderly Unit (42.4%) and lowest on the Cardiac Telemetry Unit (18%). Response rates for all units are illustrated in Table 2. The majority of participants reported the highest degree earned as a Bachelor's degree in nursing (64.7%) followed by an Associate's degree in nursing (18.4%). An earned graduate degree in nursing was reported by 5.9% of participants. No participants reported an earned doctorate degree. Table 3 further delineates the highest degree earned.

The majority of participant's were white (75%) followed by Asian (17.2%). Table 4 further describes the ethnicity, race, and marital status of participating nurses. Fifty eight percent of participant's indicated they were currently married. English as their native language was reported by 80.7% of participants. The mean number of years employed as an RN was 9.6 (SD=9.4). The percent of nurses who reported they have discharged a patient with heart failure in the last year ranged from 78.6% on the Surgery Trauma Unit to 100% on the following units: Acute Care for the Elderly Unit, Transplant Unit, Cardiac Telemetry Unit, Cardiovascular Telemetry Unit, Primary Care Unit, and the Adult ICU Step Down Unit. Table 5 delineates the years employed as an RN and the percent of nurses with experience with patients with heart failure. Finally, the majority of participants (97.8%) worked full time and 66.9% worked the 7am to 7pm shift. Full time work status is defined as $\geq$ 32 hours per week. Work status is defined in Table 6.

Table 2

Response rate for nurses responding to survey by hospital unit

Unit	Number of Nurses Responding To Survey	Total Number of nursing on unit	Response Rate
1 Acute Care for the Elderly	14	33	42.4%
2 Transplant	19	55	34.5%
3 Short Stay	7	26	26.9%
4 Cardiac Telemetry	6	32	18.0%
5 Cardiovascular Telemetry	9	44	20.0%
6 Surgical Trauma	15	44	34.0%
7 Primary Care	8	44	18.1%
8 Coronary Care ICU	14	46	30.4%
9 Surgical Oncology	24	66	36.3%
10 Complex Medicine	12	53	22.6%
11 Adult ICU Stepdown	8	29	27.5%
Total	136	472	28.8%

Table 3

Highest degree earned by participating nurses (N=136) by hospital unit.

Unit	Highest Degree Earned (1) (2)						
	Diploma Nursing	AA Nursing	Bachelors Nursing	Bachelors Non-Nursing	Graduate Degree Nursing	Graduate Degree Non-Nursing	Total
1	7%	14%	64%	7%	7%	--	
2	--	16%	68%	16%	--	--	
3	14%	29%	29%	--	14%	14%	
4	--	33%	67%	--	--	--	
5	--	22%	56%	11%	11%	--	
6	--	7%	80%	13%	--	--	
7	--	25%	50%	--	25%	--	
8	--	7%	71%	7%	7%	7%	
9	--	13%	79%	--	4%	4%	
10	--	33%	67%	--	--	--	
11	--	38%	25%	25%	12%	--	
Total	1.5%	18.4%	64.7%	7.4%	5.9%	2.2%	100%

(1) No respondent endorsed having earned an AA non-nursing, DPN degree or Ph.D.
(2) Totals may sum to 99% or 101% due to rounding

Table 4

Percent ethnicity, race and marital status of participating nurses (N=136) by unit.

Unit	Ethnicity	Race				Marital Status				English Is Native Language
	% Hispanic	% White	% African American	% Asian	% Native American	% Married	% Single (Never married)	Separated	Divorced	
1	15%	86%	--	14%	--	79%	14%		7.1%	77%
2	5%	88%	--	6%	6%	53%	37%		10%	84%
3	14%	57%	--	43%	--	71%	29%		--	86%
4	--	67%	--	33%	--	67%	33%		--	89%
5	11%	56%	11%	33%	--	56%	44%		--	67%
6	31%	65%	14%	21%	---	53%	34%	13%	--	100%
7	14%	63%	37%	--	--	50%	13%		37%	92%
8	14%	93%	--	7%	--	50%	43%		7%	92%
9	13%	71%	8%	21%	--	58%	29%		13%	79%
10	25%	92%	--	8%	--	50%	33%		17%	67%
11	--	63%	12%	25%	--	62%	25%		13%	81%
Total	14%	75%	6.7%	17.2%	0.7	58%	31%	1.5%	9.6%	80.7%

Table 5

Mean and standard deviation for years employed as an RN and percent of nurses with experience with patients with heart failure by hospital unit.

Unit	# of nurses responding	Years working as RN		Experience with Patients with Heart Failure
		Mean	Standard Deviation	Percent of nurses reporting they have discharged a patient with heart failure in the last year (N = 134)
1	14	8.2	10.4	100%
2	17	6.6	7.9	100%
3	7	13.1	8.7	85.7%
4	6	4.8	4.8	100%
5	8	7.7	11.0	100%
6	15	10.8	11.4	78.6%
7	8	12.3	9.5	100%
8	14	8.5	7.5	84.6%
9	24	8.8	7.8	83.3%
10	12	9.8	9.6	83.3%
11	8	20.0	11.2	100%
Total /Ave	133	9.6	9.4	91%

Table 6

Percent of full-time and part –time status and shift commonly worked by participating nurses (n=136) by hospital unit.

Unit	Work Status		Shift most frequently worked			
	Full-time	Part-Time [(1)]	7am to 3pm	7am to 7pm	7pm to 7am	Other
1	100%		7%	64%	29%	
2	100%			79%	21%	
3	100%			100%		
4	67%	33%		67%	33%	
5	100%			78%	22%	
6	100%		27%	60%	13%	
7	88%	12%	12%	63%	25%	
8	100%			71%	29%	
9	100%			58%	42%	
10	100%		17%	42%	33%	8%
11	100%			75%	25%	
Total/mean	97.8%	2.2%	5.9%	66.9%	26.5 %	

[(1)] Part-Time is defined as less than 32 hours per week

Variables

There are four classes of variables used in the current study: (a) EI, a structure variable, made up of five composite subscales and the total score; (2) readmission rate for patients with a HF diagnosis, an outcome variable; (3) Patient satisfaction, an outcome variable which is made up of 5 items; and (4), nurses work environment variables, including nurse turnover rates that is a process variable and RN direct care hours per patient day that is a structure variable within the model. Each of these four classes of variables is described below.

Nurses' Emotional Intelligence. The scores from the EQi-2.0 are standardized to a mean of 100 and a standard deviation of 15**.** To aide in interpreting the scores from the EQi-2.0**,** the

authors suggest **s**cores below 90 are to be interpreted as reflecting low EI and scores above 110 are considered to reflect high EI for all three scales (e.g., total score, composite subscales and each of the three core subscales that make up each composite subscale). All of the participants scores for the total score, the five composite subscales, and all composite core subscales were between 90 and 110 indicating average EI among this sample of nurses. The mean total EI score for all participants was 102.10 (N=138, SD=12.88). The total EI scores ranged from 99.44 (N=9, SD=12.56) on the Cardiovascular Telemetry Unit to 105.58 (N=12, SD=9.11) on the Complex Medicine Unit.

Composite Subscale Scores. The mean score for the Self-Perception composite subscale was 102.91 (SD=12.55) and ranged from 99.4 (N=6, SD=12.56) on the Cardiac Telemetry Unit to 106.33 (N=12, SD=9.93) on the Complex Medicine Unit. The mean score for the Self-Expression composite subscale was 100.31 (SD=13.26) and ranged from 94.33 (N=6, SD=13.47) on the Cardiac Telemetry Unit and Cardiovascular telemetry Unit (N=9, SD=13.47) to 107.50 (N=12, SD=6.55) on the Complex Medicine Unit. The mean score for the Interpersonal composite subscale was 105.91 (SD=12.38) and ranged from were lowest on the Surgery Trauma Unit (N=15, M=100.40, SD=11.73) and highest on the Complex Medicine Unit (N=12, M=109.66, SD=11.84). The mean score for the composite subscale Decision Making was 101.50 (SD=14.04) and ranged from 95.66 (N=9, SD=14.74) on the Adult ICU Step Down Unit to 105.57 (N=7, SD=13.30) on the Short Stay Unit. Finally, the mean score for the composite subscale Stress Management was 98.40 (SD=12.93) and ranged from 92.72 (N=15, SD=12.85) on the Surgery Trauma Unit to 102.29 (N=24, SD=13.47) on the Surgical Oncology Unit. Table 9 delineates the total and composite EI scores.

Table 9

Means, standard deviations and N's for EQI-2 Total Score and five composite subscales scores by unit. EQI-2 is standardized to a mean of 100 and SD of 15. Scores below 90 are considered "low" and scores above 110 are considered "high."

Unit	Total Score	Composite Subscales				
		Self-Perception	Self-Expression	Inter personal	Decision Making	Stress Management
1 Acute Care for the Elderly	101.40 (14.45) N= 15	100.66 (14.29)	99.20 (11.20)	103.86 (13.79)	100.53 (17.64)	102.06 (12.10)
2 Transplant	104.78 (13.33) N=19	105.47 (12.96)	104.00 (13.1)	107.84 (13.72)	104.15 (14.11)	99.26 (10.88)
3 Short Stay	105.14 (14.69) N=7	104.85 (13.34)	102.00 (16.11)	109.14 (15.00)	105.57 (13.30)	100.28 (11.95)
4 Cardiac Telemetry	98.16 (15.71) N=6	99.44 (12.56)	94.33 (13.47)	108.22 (9.95)	98.11 (14.73)	94.22 (16.47)
5 Cardiovascular Telemetry	99.44 (12.56) N=9	102.88 (10.43)	94.33 (13.47)	108.22 (9.95)	98.11 (14.73)	94.22 (16.47)
6 Surgery Trauma	97.66 (9.47) N=15	101.00 12.0	96.53 (12.19)	100.40 (11.73)	99.20 (9.23)	92.73 (12.85)
7 Primary Care	101.25 (15.75) N=8	104.62 (17.54)	99.75 (10.37)	103.75 (13.30)	100.12 (19.85)	97.62 (14.17)
8 Coronary Care ICU	100.35 (9.49) N=14	101.85 (9.03)	99.85 (14.48)	102.57 (9.59)	100.21 (8.66)	97.00 (10.74)
9 Surgical Oncology	104.70 (15.36) N=24	103.37 (15.19)	100.62 (16.34)	108.95 (13.15)	104.91 (14.91)	102.29 (13.47)
10 Complex Medicine	105.58 (9.11) N=12	106.33 (9.93)	107.50 (6.55)	109.66 (11.84)	104.91 (9.97)	96.25 (14.10)
11 Adult/ICU Step Down	99.77 (12.49) N=9	100.22 (9.83	99.22 (8.21)	105.88 (11.16)	95.66 (14.74)	96.88 (14.60)
Mean (SD)	102.10 (12.88) N=138	102.91 (12.55)	100.31 (13.26)	105.91) (12.38)	101.50 (14.04)	98.40 (12.93)

The means, standard deviations, and sample size for the composite subscales and the core subscales are further delineated in Tables 10 – 14 in Appendix B.

Heart Failure readmission rates. The percent of patients with HR readmissions, for any cause, within 30-days of initial discharge is shown in Table 15 in Appendix C. These data were retrieved from a hospital-wide maintained data system**.** The percent ranged from 0% or no patients with HF readmissions on the Short Stay and Coronary Care ICU Units to 29% of the HF patients readmitted on the Acute Care for the Elderly Unit. Seven of the units report having no patients initially admitted to the unit with a diagnosis of HF in some of the months examined in this study. In fact, of the 154 cells examined across the 11 units for the 14 month period, 26 of the cells (17%) reflected no HF admissions. For these units that did initial admit HF patients (e.g., 128 observations), however, there were no readmissions among the units for 82 or 53% of the 154 cells examined.

Patient Satisfaction. There are five satisfaction questions completed by the patients discharged from these units that were examined in this study: (1) overall ratings of hospital stay, (2) nurses level of communication, (3) nurses level of courtesy and respect, (4) nurses ability listen, and (5) nurse ability to explain. These data were retrieved from a hospital-wide maintained data system**.** The mean, standard deviation, and sample size by unit by month for the patient satisfaction variable "How would you rate this hospital" is shown in Table 16 in Appendix D. Scores ranged from 8.53 (N=32) on the Adult ICU Step Down Unit to 9.19 (N=369) on the Transplant Unit. The grand mean for this variable was M=8.83 (SD=0.55). See Figure 2.

Table 17 in Appendix E presents the mean, standard deviation, and sample size by unit and month for the patient satisfaction variable "Nurses' Communication Skills" and range from 1 (never) to 4 (always). These scores ranged from 3.61 (N=32) on the Adult ICU Step Down Unit

to 3.73 (N=373) on the Transplant Unit. The grand mean for this variable was M=3.66 (SD=.18).

(See Figure 3).

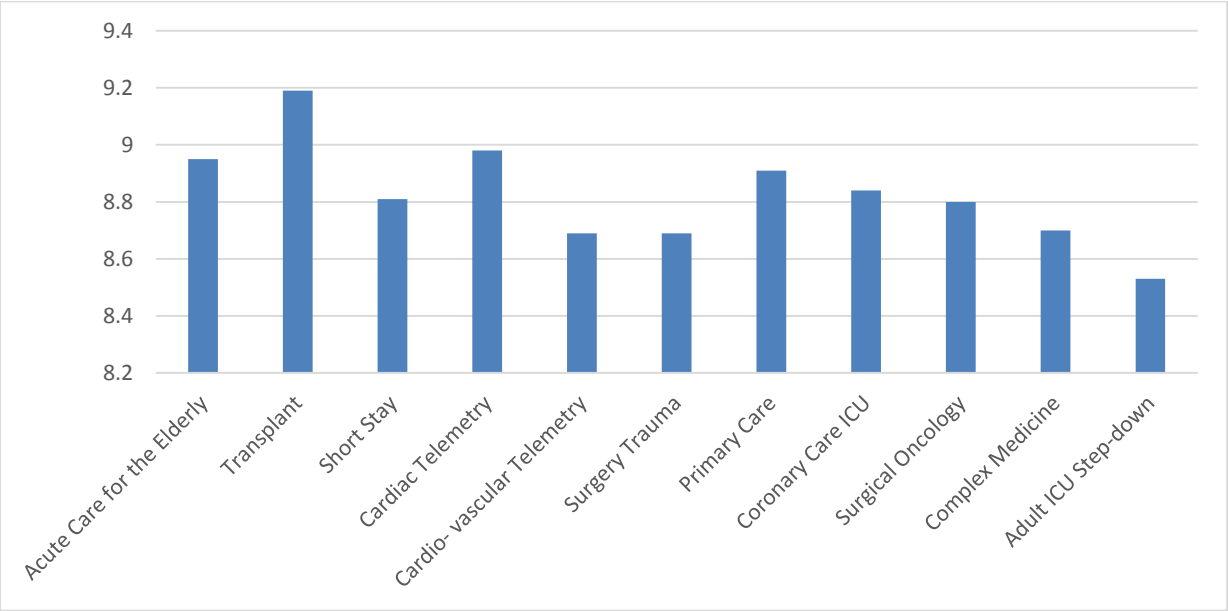

Figure 2. Mean ratings of the patient satisfaction item *How would you rate this hospital* by unit. Ratings can range from 0 (worst possible hospital) to 10 (best possible hospital).

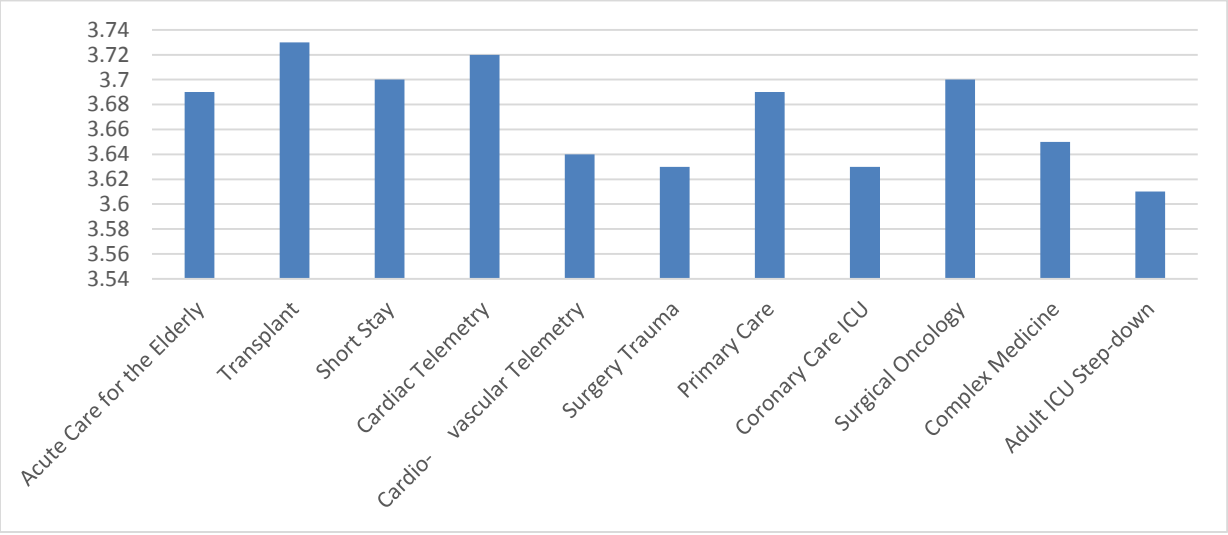

Figure 3. Mean ratings of the quality of nurses' *communication skills* by unit. This composite scale is made up of three items: Patients rated how often nurses (1) treated patients with curiosity and respect, (2) listened carefully, and (3) explained care clearly. Each of the three items were rated from 1 (never) to 4 (always).

The variable "During this hospital stay, how often did the nurses treat you with courtesy and respect" is presented in Table 18 in Appendix F and scores can range from 1 (never) to 4 (always). The highest mean score was reported on the Coronary Care ICU Unit (M=3.81, N=338) and the lowest scores were reported on the Cardiovascular Telemetry Unit (M=3.74, N= 441) and on the Surgery Trauma Unit (M=3.74, N=354). The grand mean for this variable was M=3.79 (SD=.15), see Figure 4. Table 19 in Appendix G describes the mean, standard deviation, and sample size for the patient satisfaction variable "During this stay, how often did nurses listen carefully to you" and range from 1 (never) to 4 (always). Scores ranged from 3.56 (N=32) on the Adult ICU Step Down Unit to 3.68 (N=373) on the Transplant Unit. The grand mean for this variable was M=3.62 (SD=.23), see Figure 5. Finally, the variable "During this stay, how often did nurses explain things in a way you could understand" is illustrated in Table 20 in Appendix F and range from 1 (never) to 4 (always). The scores for this item ranged from 3.46 (N=32) on the Adult ICU Step Down Unit to 3.69 (N=371) on the Transplant Unit. The grand mean for this variable was M=3.59 (SD=.26), see Figure 6.

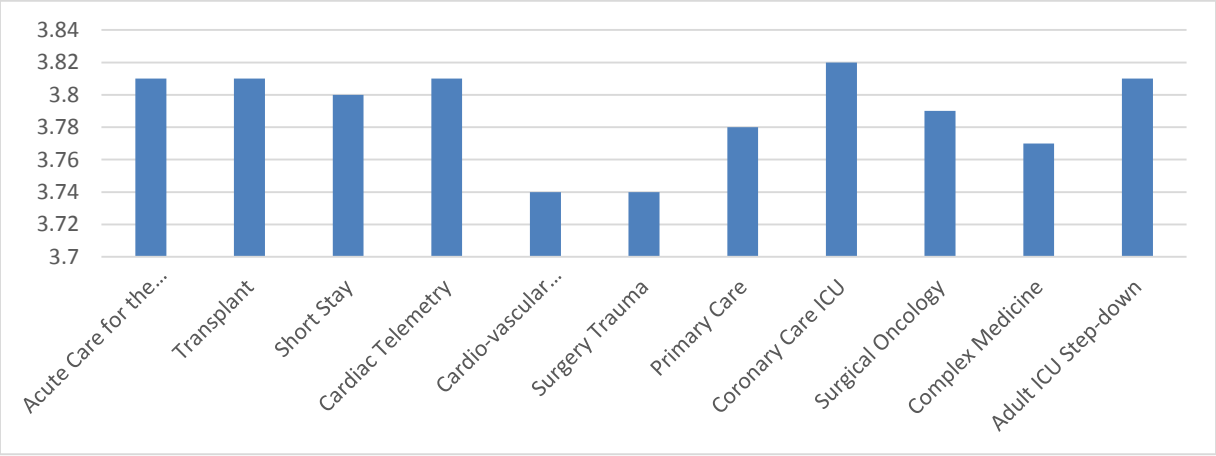

Figure 4. Mean ratings for the patient satisfaction item, *During this hospital stay, how often did the nurses treat you with courtesy and respect?* by unit. Ratings can range from 1 (never) to 4 (always).

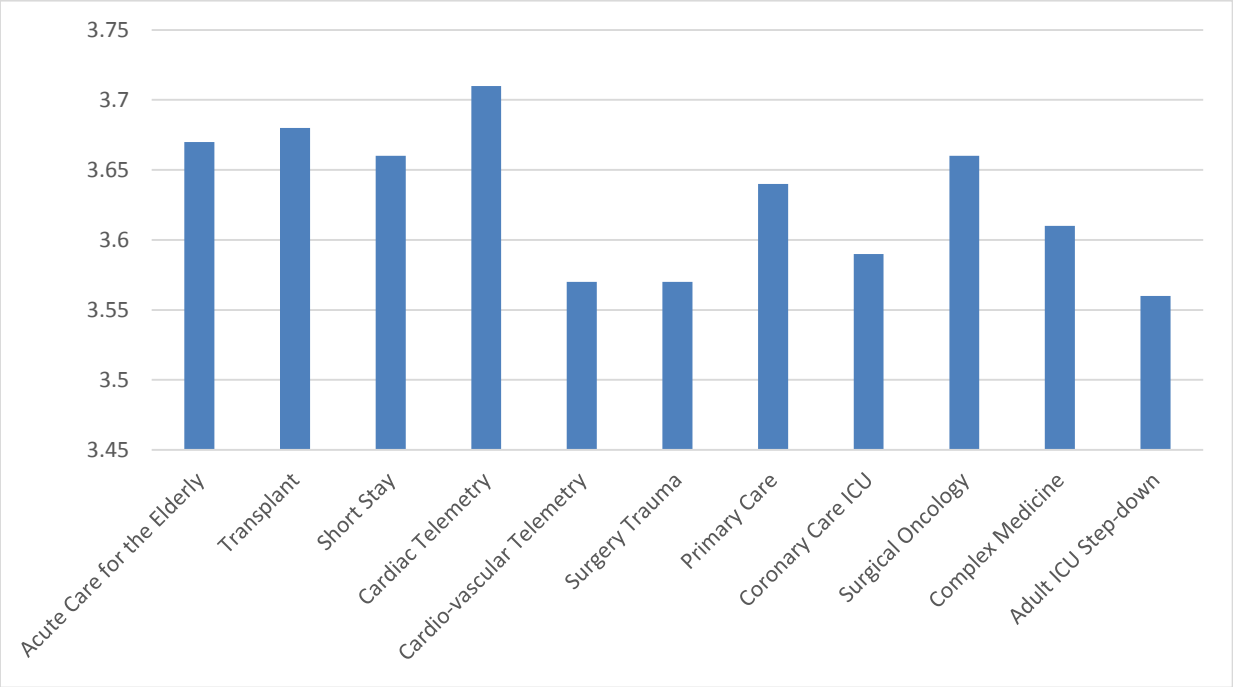

Figure 5. Mean ratings for the patient satisfaction item, *During this hospital stay, how often did nurses listen carefully to you?* by unit. Ratings can range from 1 (never) to 4 (always).

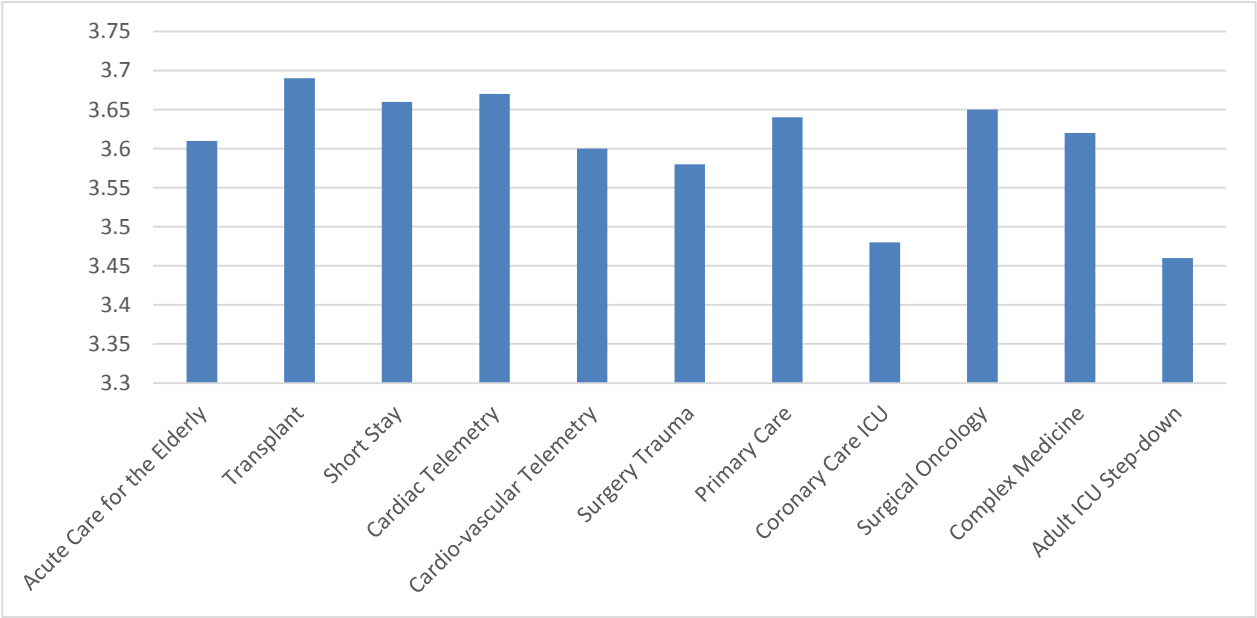

Figure 6. Mean ratings for the patient satisfaction item *During this hospital stay, how often did nurses explain things in a way you could understand?* by unit. Ratings can range from 1 (never) to 4 (always).

Unit workforce variables: nurse turnover rates and RN direct care hours per patient day. Both variables were retrieved from a hospital-wide maintained data system. The rate of turnover of RN staff is a process variable in the study model and revealed a 17.32% average turnover rate for these 11 units from March 1, 2013 and April 30, 2014. The rate was highest in the Transplant Unit (35.46%) and lowest on the Adult ICU Step Down unit (3.45%). The total turnover rate of all 11 units was greater than the hospital wide nursing turnover rate of 16.89. All non-zero percentages were higher than the percent hospital wide with the exception of two months (see Table 7 in Appendix A). Average RN direct care hours per patient day is also a process variable and varied from an average of 13.5 hours on the Coronary Care ICU to 5.6 hours the Cardiovascular Telemetry Unit and on the Surgery Trauma Unit (See Table 8 in Appendix A).

Results by Aim

There were four aims in the study and the unit of analysis for this study was 11 hospital units repeatedly assessed monthly for a total of 154 observations in the analysis. The follows sections describe the results for each aim.

Aim 1: Examine the relationship between nurse EI and the percent of 30-day all-cause readmissions for HF. H1: There is a direct, significant inverse relationship between nurse EI and percent of 30- day all-cause readmissions for HF. There were 128 measurements (observations) for heart failure readmission (HFR) rate across the 11 hospital units and 14 months of evaluation. The unit data were not normally distributed, (skewness = 5.50) and (kertosis = 55.34), therefore at the discretion of the investigator, the unit data were grouped into three levels; HFR of 0; HFR of >0 to .25; and HFR >.25. The percent of HFR among the three levels was as follows: HFR of 0 (64.06%); HFR of > 0 to .25 (21.09 %); and HFR > .25

(14.84%). The data on rate of HF readmission did not meet the assumption of normal distribution, therefore a Pearson correlation was not performed. Instead, a one-way ANOVA was conducted to explore the effect of nurse emotional intelligence on the three levels of heart failure readmissions. There was a non-significant difference at the $p < .05$ level for the three levels $F(2,125) = 2.51$, $p = .085$. The mean scores total EI for each level of HFR were HFR of 0 (n=82, M= 101.9, SD = 2.9), HFR of 0 .0 to 0.25 (n = 27, M = 100.8 SD = 2.63), and HFR of > 0.25 (n = 19, M = 100.75, SD = 2.30). (See Figure 7). These data indicate a small trend (non-significant) of higher total EI being associated with lower rates of HF readmission.

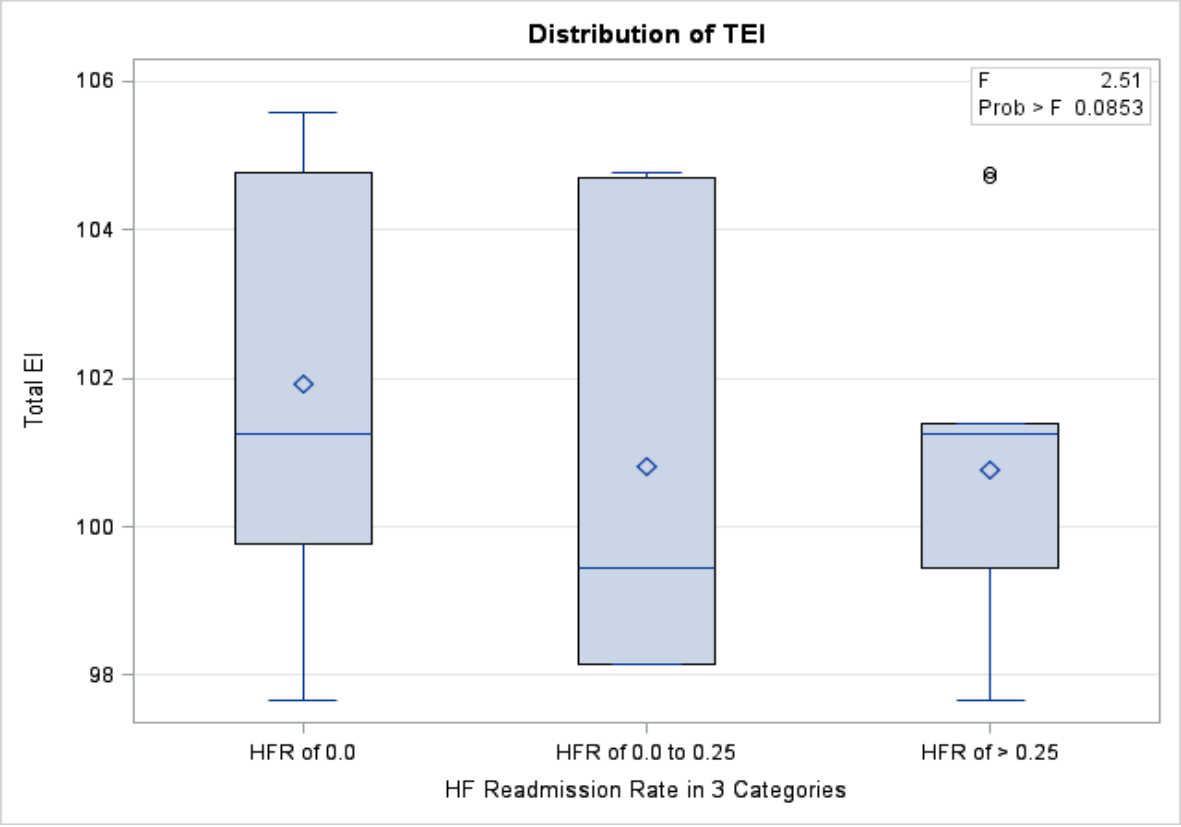

Figure 7. The distribution of Emotional Intelligence (EI) across three levels of Heart Failure Readmission (HFR) rates.

The distribution of HF readmission was skewed and based on discretion, the unit level rates of HF readmission were classified into two categories (0.0 versus >0.0), mean scores of total EI were significantly different at the $p < .05$ level for HFR > 0, $F(1,126) = 5.06$, $p = .026$ (see Figure 8). These data indicate a significant finding of higher total EI being associated with lower rates of HF readmission.

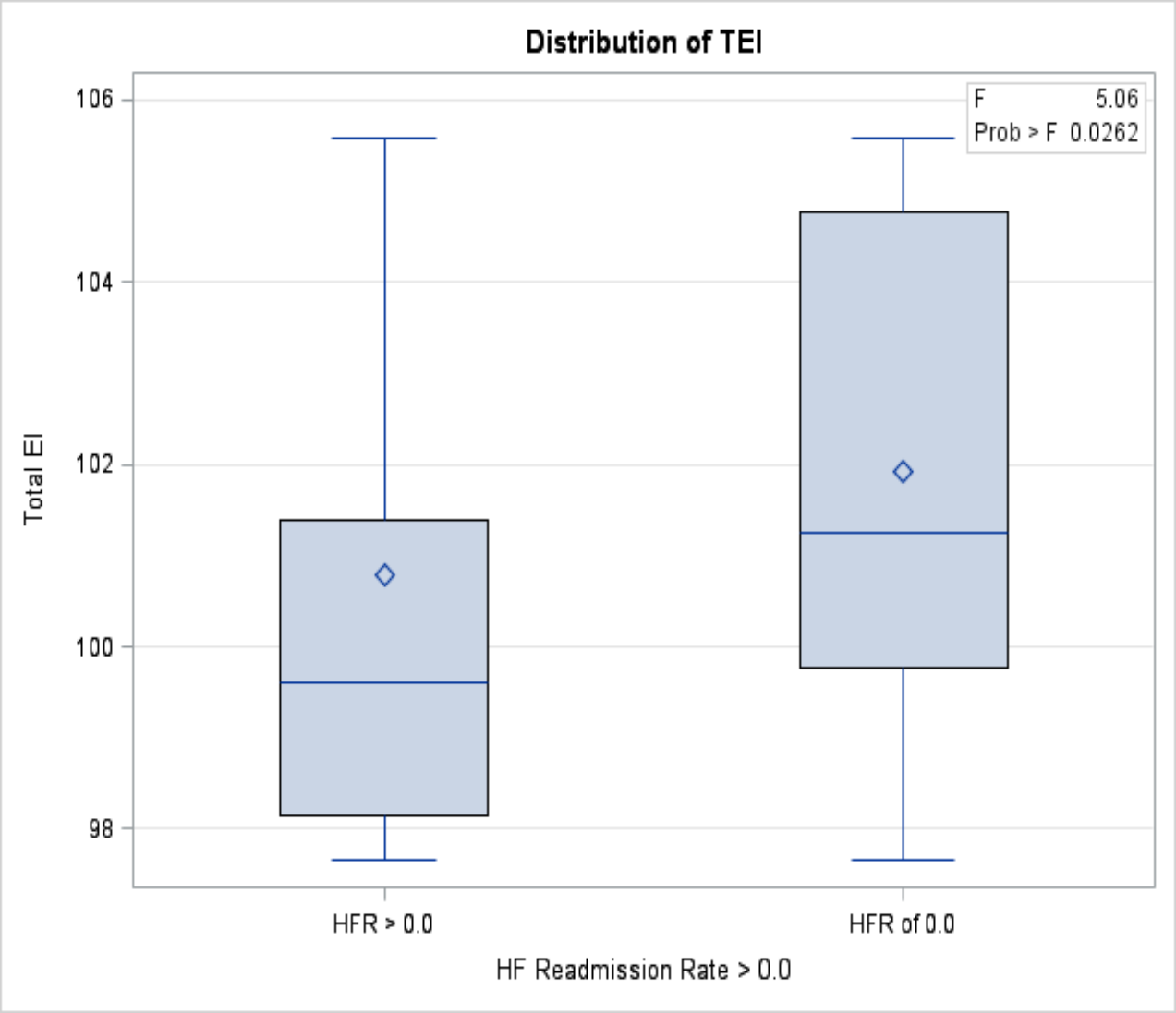

Figure 8. The distribution of Emotional Intelligence (EI) across two levels of Heart Failure Readmission (HFR) rates

The use of an altered cut point for dichotomizing unit rates of HF readmission (e.g., greater than or lower than 25%), found a non-significant difference at the $p < .05$ level for HFR > 0.25 $F(1,126) = 1.65$, $p = .20$ (See Figure 9).

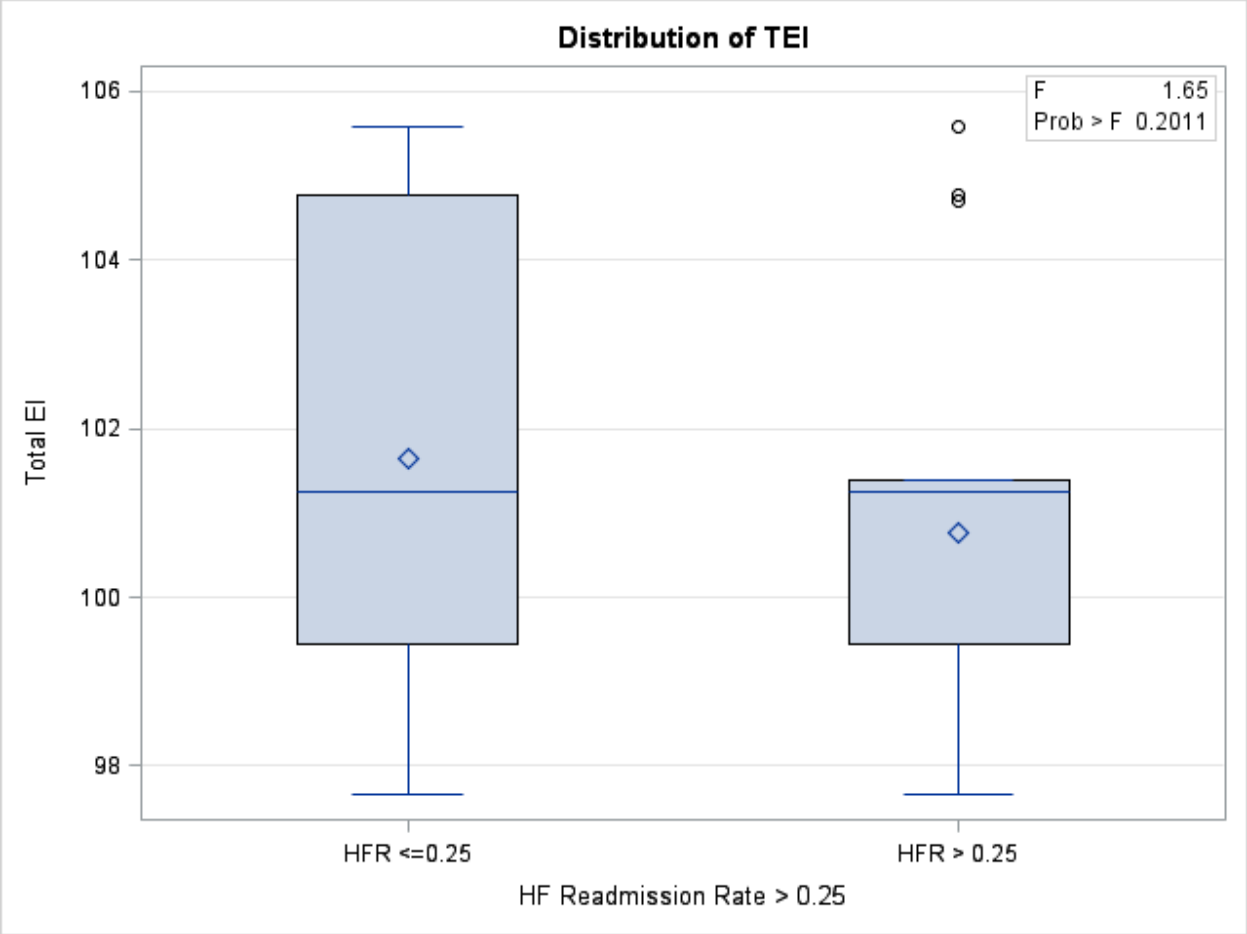

Figure 9. Distribution of Emotional Intelligence (EI) across two Health Failure Readmission (HFR) rates using a dichotomious cut point (i.e., HF readmission rates below 25% and over 25%)

Whereas the above analyses were based on ANOVA, the generalized estimating equation model was fit to account for correlated observations (i.e. monthly measurement of HF readmission rates across units). This model was based on the binomial distribution and logit link to estimate odds ratios. For each unit increase in EI, the odds of no HF readmission occurring

during a month for a given unit increased by an estimated 18% OR = 1.18 95% CI [.89, 1.56], p = 0.25. However, this apparent higher likelihood for higher total EI to translate to higher odds of no HF readmissions did not reach statistical significance.

Aim 2: Examine the relationship between nurse EI and patient satisfaction with nursing care by unit. H2: There is a direct significant positive relationship between nurse EI and patient satisfaction with nursing care by unit. The relationship between the variables nurse EI and patient satisfaction with nursing care was initially investigated using Pearson correlation. There was a non-significant small positive association between nurse EI and patients overall rating of the hospital (r = .08, n = 153, p = .32). There was a very small, non-significant positive correlation between nurse EI and courtesy and respect, (r = .04, n = 153, p =0.54). There was also a small non-significant positive relationship between nurse EI and listening, (r= .11, n = 153, p = .16). Similarly, there was a small non-significant positive correlation between nurse EI and explaining, (r = .14, n = 153, p = .07). Finally, there was a non-significant positive correlation between nurse EI and communication, (r = .11, n = 153, p = .15).

A linear mixed model specifying the normal distribution was used to account for correlated observations. For each unit increase in nurse EI, the estimated hospital rating would increase by .01 (r=.00, p=.29). For each unit increase in EI, the variable courtesy and respect would increase by .002 (r = <.00, p = .55). For each unit increase in EI, the variable listen would increase by .009 (r = .005, p = .21) .For each unit increase in EI, the variable explain would increase by .013, (r = .01, p = .10). Finally, for each unit increase in EI, the variable communication would increase by .007, (r = .0005, p = .17). Thus, in aggregate, these data indicated small non-significant trends for nurse EI and patient satisfaction with nursing care.

Aim 3: Examine the relationship between patient satisfaction with nursing care and percent 30-day all-cause readmissions for HF by unit. As in the first aim, the data did not meet the assumption of a normal distribution; therefore, a one-way ANOVA was conducted to explore the effect of patient satisfaction with nursing care on HFR. There was minimal evidence of an association at the $p < .05$ level for rate hospital and HFR = 0, $F(1,125) = 0.52$, $p = .47$. The mean score of rate hospital for level of HFR was: HFR > 0.0 (n = 46, M=8.91, SD =0.37), HF of 0.0 (n = 81, M = 8.85, SD = .51), (See Figure 10).

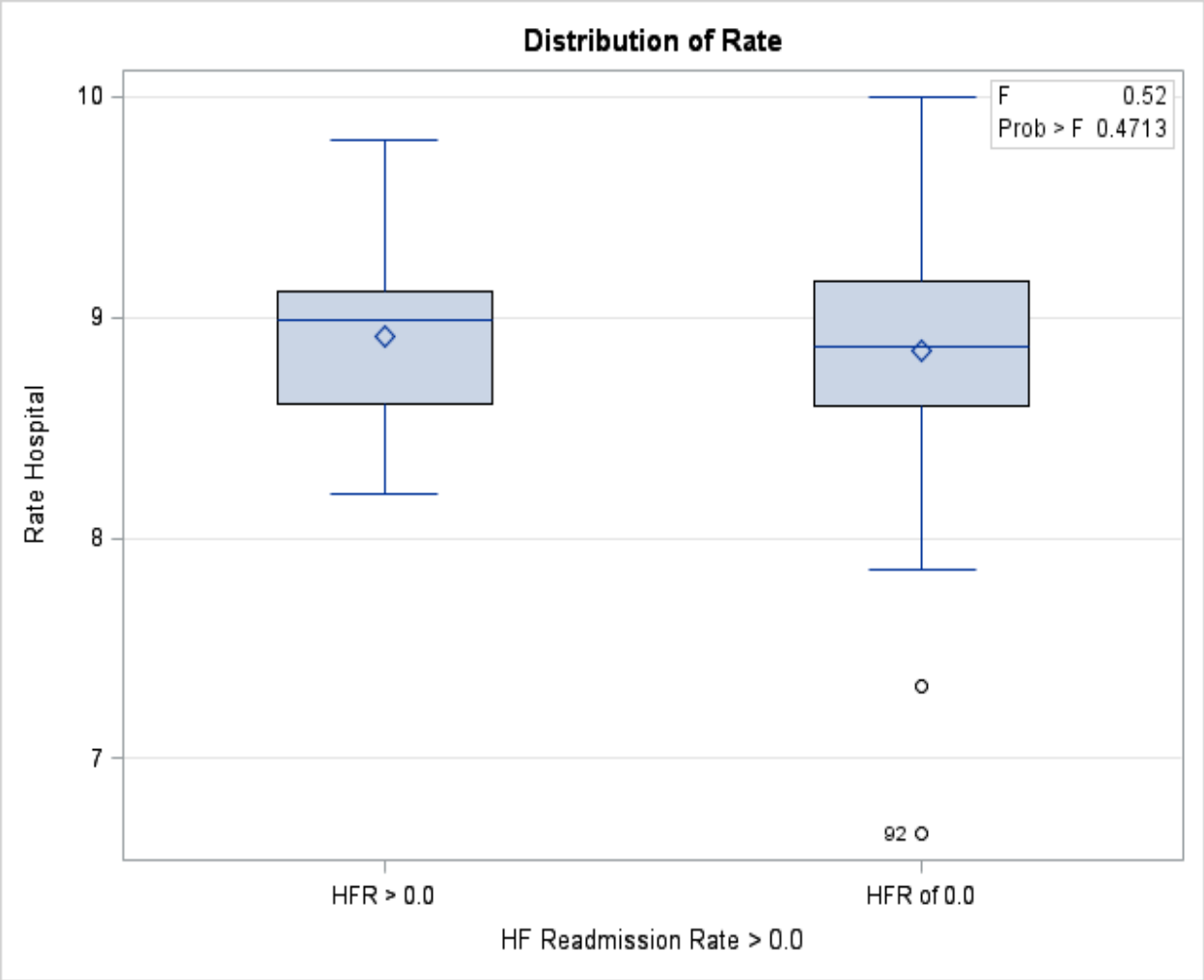

Figure 10. Average level of Patient Satisfaction when rating over all hospital stay by two levels of HFR rates: zero and greater than zero

There was also no evidence at the $p < .05$ level for an association between courtesy and respect and HFR $F(1,125) = .02$, $p = .87$, (See Figure 11). The mean score of courtesy and respect for the level of HFR was HFR > 0.0 (n=46, M=3.79, SD =0.09, HFR of 0.0 (n=81, M=3.79, SD=0.13).

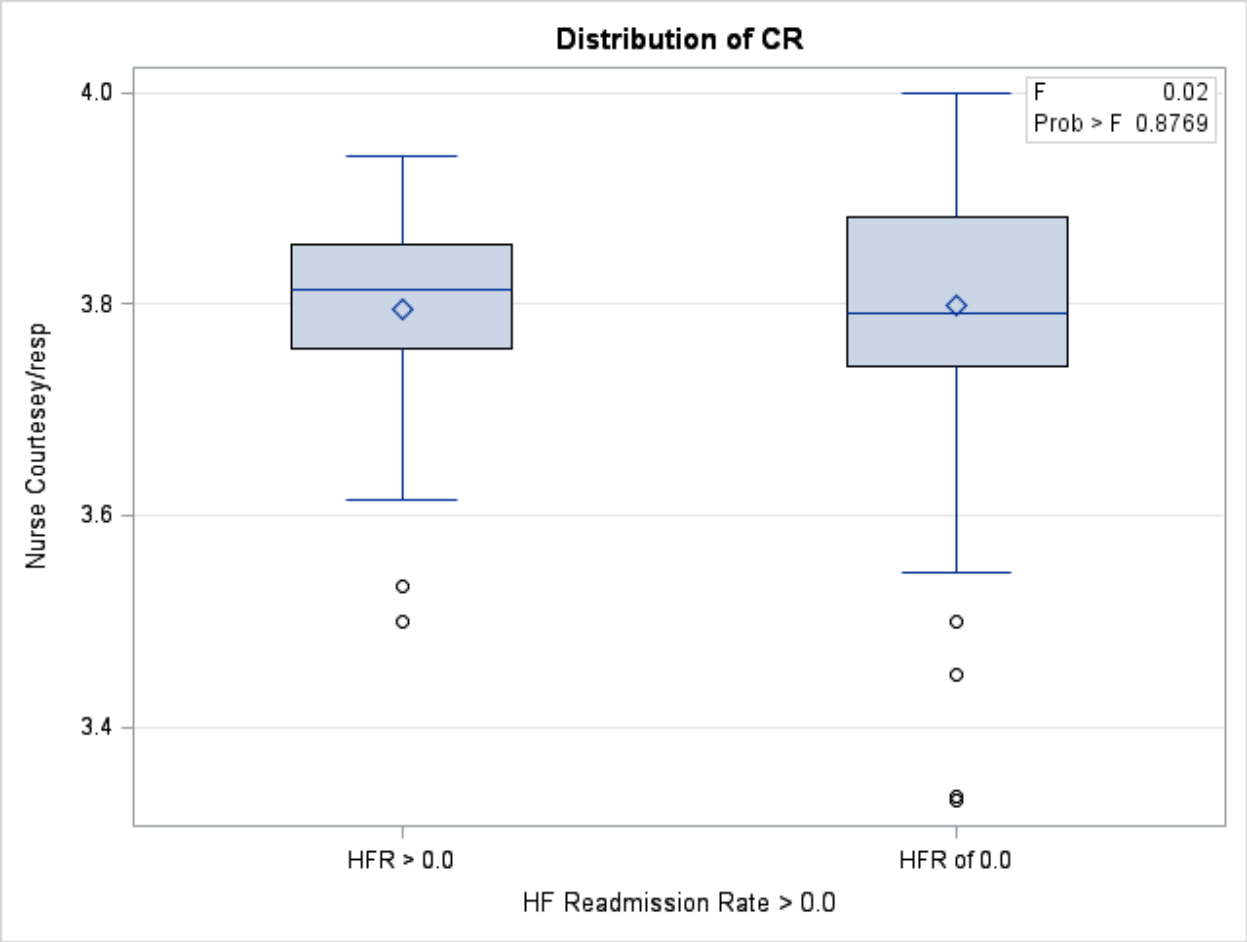

Figure 11. Average patient satisfaction rating of Nurses' Courtesy and Respect for two levels of HFR rates zero and greater than zero.

Similarly, there was no evidence of an association at the $p < .05$ level for listening and HFR $F(1,125) = .04$, $p = .83$, (See Figure 12). The mean score of listening for the level of HFR was; HFR > 0.0 (n=46, M=3.64, SD=0.12), HFR of 0.0 (n = 81, M = 3.64, SD = .19).

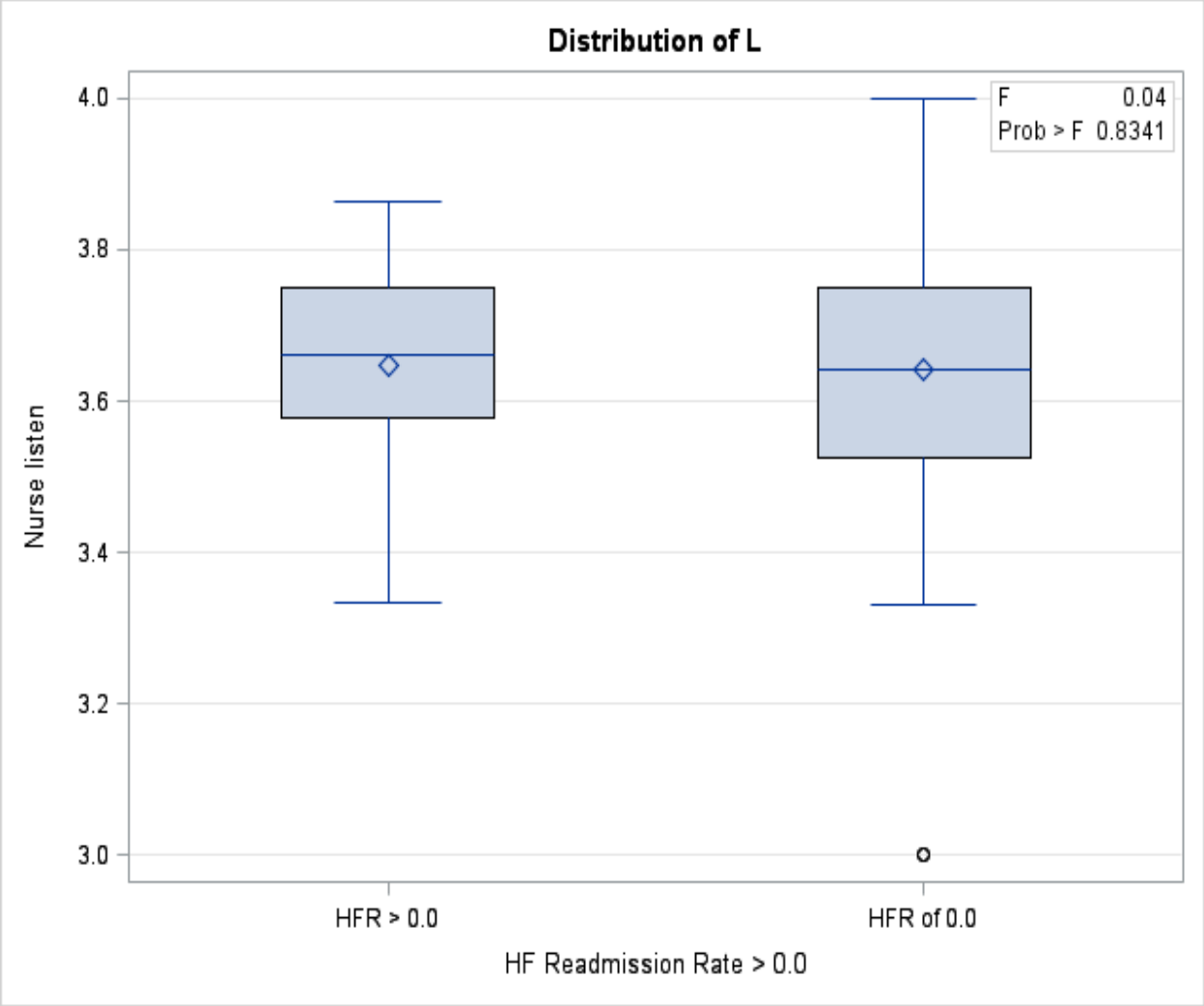

Figure 12. Average patient satisfaction ratings of nurses' ability to listen and two levels of HFR rates zero and greater than zero.

In addition, there was no evidence of an association at the $p < .05$ level for explain and HFR $F(1,125 = .49, p = .48$, (See Figure 13). The mean score of explain for the level of HFR was HFR>0 (n=46, M=3.64, SD =.13), HFR of 0.0 (n=81, M=3.61, SD=.23).

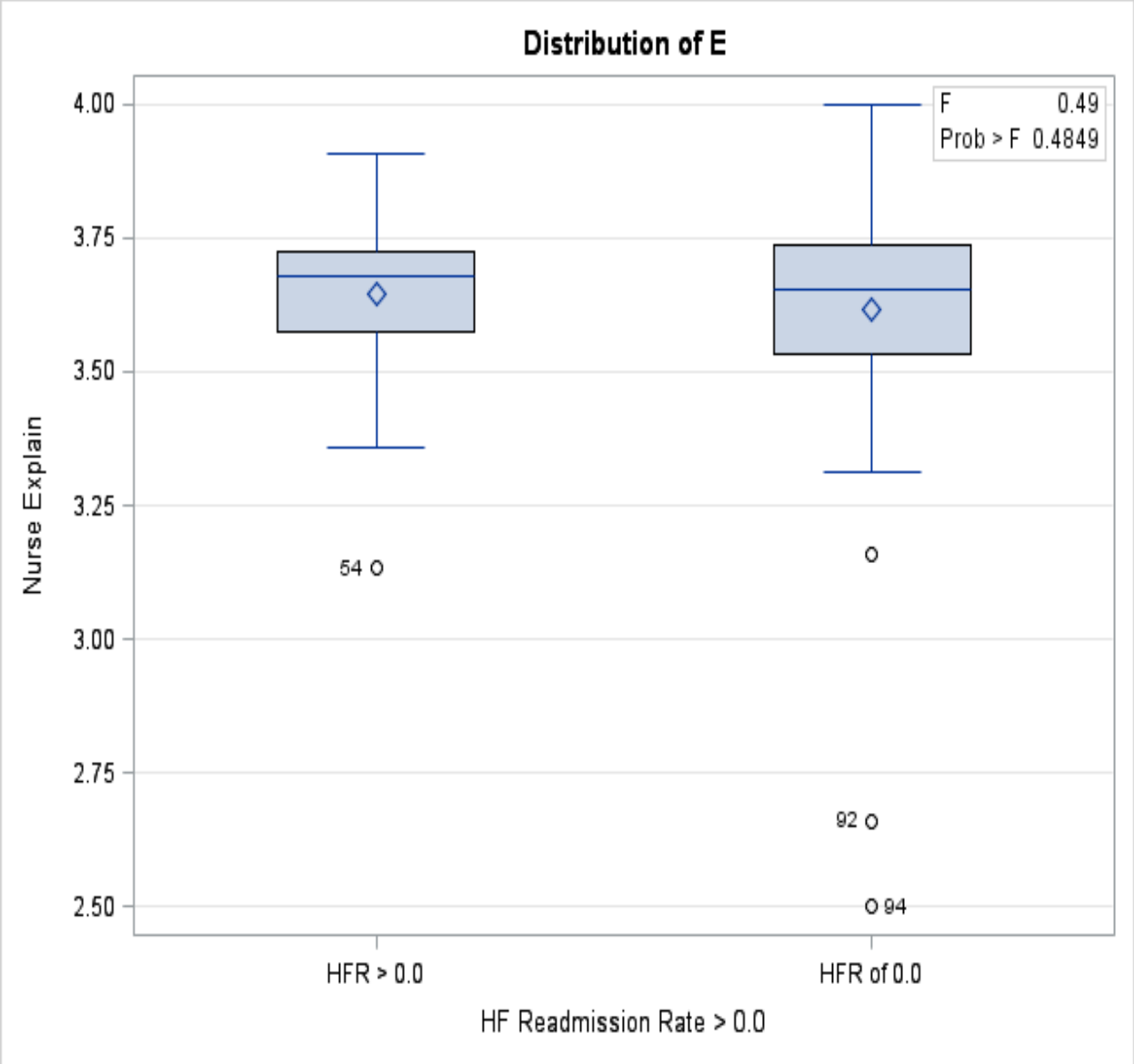

Figure 13. Average patient satisfaction rating of nurses' ability to explain and two levels of HFR rates: zero and greater than zero.

Finally, there was no evidence of an association at the p<.05 level for communication and HFR F (1,125) = .02, p =.88. The mean score of communication for the level of HFR was HFR >0.0 (n=46, M=3.68, SD=.11), HFR of 0.0 (n=81, M=3.68, SD=0.16), (See Figure 14).

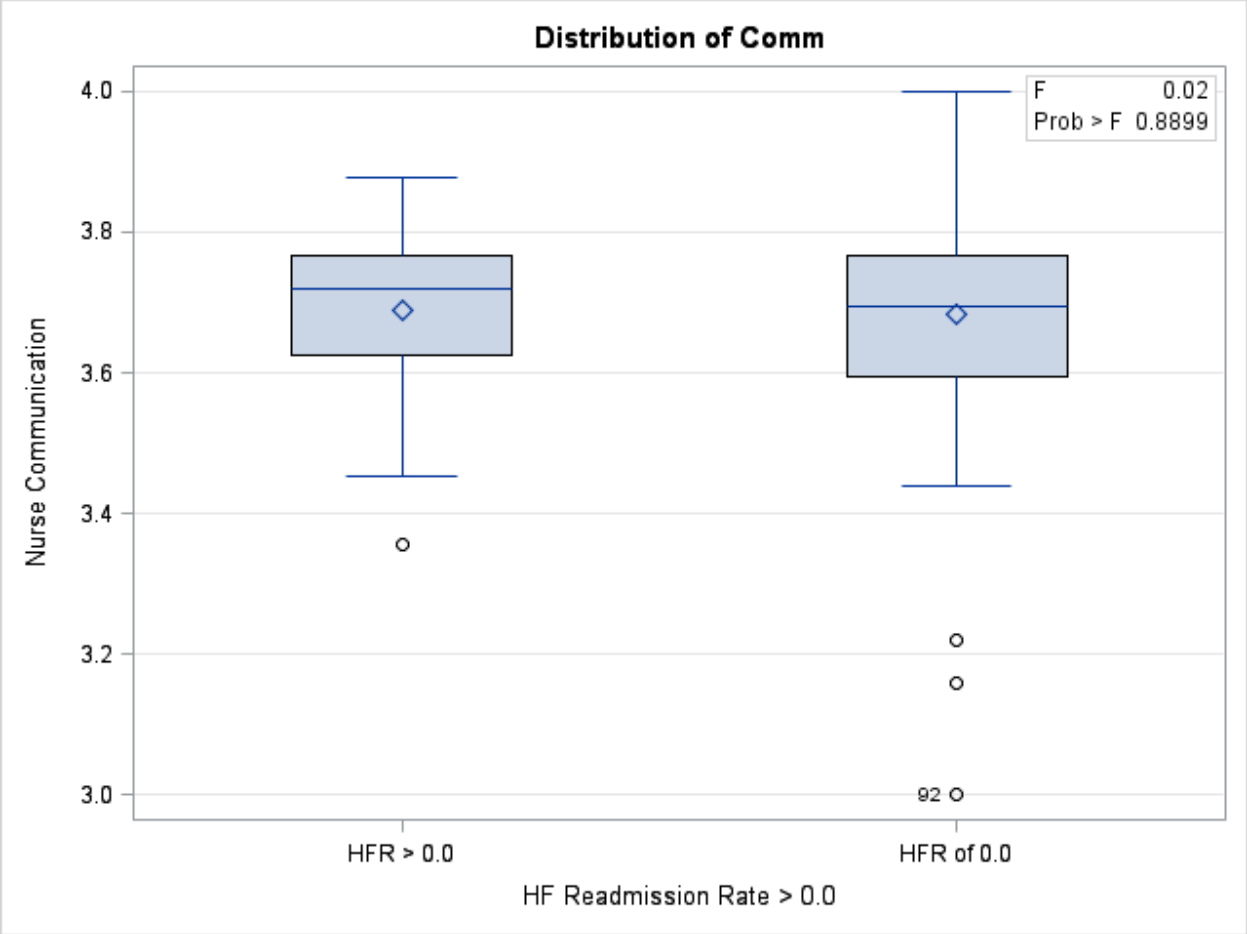

Figure 14. Average patient satisfaction ratings of nurses level of communication and two levels of HFR rates zero and greater than zero.

Despite the above described lack of associations, a generalized estimating equation model was used to account for correlated observations. For each unit increase in rate hospital, the predicted odds of avoiding HFR (i.e. monthly HF rate of 0.0) decreased by 8% OR = .92, 95% CI [.61, 1.30], p = 0.70. For each unit increase in courtesy and respect, the predicted odds of

HFR increased by 96% OR = 1.96, 95% CI [.29, 13.09], p = .48. For each unit increase in listening, the predicted odds of avoiding HFR (i.e. monthly HF rate of 0.0) increased by 88% OR = 1.88, 95% CI [.50, 7.07], p = .35. There was no relationship between explaining and avoiding HFR OR =1.0, 95% CI [.46, 2.15], p = .99. Finally, for each unit increase in communication, the predicted odds of avoiding HFR increased by 83% OR = 1.83, 95% CI [.42, 8.02], p = .41. None of these estimates of the relationship between measures of patient satisfaction with nursing care and rates of 30-day all-cause HF readmissions were statistically significant.

Aim 4: Examine the extent to which the hypothesized relationship between nurse's EI and HF readmission rates is mediated through patient satisfaction. The hypothesized relationship between nurse EI and HFR was non-significant. Therefore, further examination of the mediating effect of patient satisfaction on HFR was not indicated.

In summary, the examination of the four aims in this study revealed findings that were in the expected direction but not at the level or intensity expected. A summary is presented in Table 21.

Table 21.

Summary of study results by study aim

Aim	Results	Findings
1. Examine the relationship between nurse EI and the percent of 30-day all-cause readmissions for HF.	F (1,126) = 5.06, p = .026	Mean EI total scores were significantly different at the $p < .05$ level for HFR rates of zero or greater than zero.
	OR = 1.18 95% CI [.89, 1.56], p = 0.25.	For each unit increase in EI, the odds of no HF readmission occurring during a month for a given unit increased by an estimated 18%.

Table 21 (continued)

Aim	Results	Findings
2. Examine the relationship between nurse EI and patient satisfaction with nursing care by unit.	EI and Patient rating of hospital r = .08	EI and patients overall rating of the hospital (r = .08, n = 153, p = .32). For each unit increase in nurse EI, the estimated hospital rating would increase by .01 r =.00, p=.29.
	Nurse courtesy and respect r = .04	EI and courtesy and respect, r = .04, n = 153, p =0.54. For each unit increase in EI, the variable courtesy and respect would increase by .002 r = < .00, p = .55.
	Nurse listening skills r = .11	EI and listening, r= .11, n = 153, p = .16. For each unit increase in EI, the variable listen would increase by .009 r = .005, p = .21.
	Nurse ability to explain r = .14	Nurse EI and explaining, r = .14, n = 153, p = .07. For each unit increase in EI, the variable explain would increase by .013, r = .01, p = .10
	Nurse communication skills r = .11	There was a non-significant positive correlation between nurse EI and communication, r = .11, n = 153, p = .15. For each unit increase in EI, the variable communication would increase by .007, r = .0005, p = .17.

Table 21 (continued)

Aim	Results	Findings
Aim 3: Examine the relationship between patient satisfaction with nursing care and percent 30-day all-cause readmissions for HF.	There was minimal evidence of an association between patient's ratings of the hospital and HFR.	Rate hospital and HFR = 0, F (1,125) = 0.52, p = .47. For those patients with no HFR, mean rating of hospital was 8.85 (n=81). For those patients with a HFR, their ratings of the hospital was 8.91 (n=46). For each unit increase in rate hospital, the predicted odds of avoiding HFR (i.e. monthly HF rate of 0.0) decreased by 8% OR = .92, 95% CI [.61, 1.30], p = 0.70.
	There was also no association between patient's rating of nurse's courtesy and respect and HFR.	Patients ratings of nurse courtesy and respect and HFR F (1,125) = .02, p = .87. For those patients with no HFR, mean rating of courtesy was 3.79 (n=81). For those patients with a HFR, their ratings of the courtesy was 3.79 (n=46). For each unit increase in courtesy and respect, the predicted odds of HFR increased by 96% OR = 1.96, 95% CI [.29, 13.09], p = .48.
	There was no evidence of an association between patient's ratings of nurses listening skills and HFR.	Listening and HFR F (1,125) = .04, p = .83. For those patients with no HFR, mean rating of courtesy was 3.64 (n=81). For those patients with a HFR, their ratings of courtesy was 3.64 (n=46). For each unit increase in listening, the predicted odds of avoiding HFR (i.e. monthly HF rate of 0.0) increased by 88% OR = 1.88, 95% CI [.50, 7.07], p = .35.

Table 21 (continued)

Aim	Results	Findings
	There was no evidence of an association between patient's ratings of nurse's ability to explain and HFR.	Explain and HFR F (1,125) = .49, p = .48. For those patients with no HFR, mean rating of nurses ability to explain was 3.61 (n=81). For those patients with a HFR, their ratings of nurses ability to explain was 3.64 (n=46). There was no relationship between explaining and avoiding HFR OR =1.0, 95% CI [.46, 2.15], p = .99.
Aim 3 continued	There was no evidence of an association between communication and HFR.	Patients ratings of nurses communication skills and HFR, F (1,125) = .02, p =.88. For those patients with no HFR, mean rating of communication skills was 3.68 (n=81). For those patients with a HFR, their ratings of communications skills was 3.68 (n=46). For each unit increase in communication, the predicted odds of avoiding HFR increased by 83% OR = 1.83, 95% CI [.42, 8.02], p = .41.
Aim 4: Examine the extent to which the hypothesized relationship between nurse's EI and HF readmission rates is mediated through patient satisfaction.	The hypothesized relationship between nurse EI and HFR was non-significant.	Further examination of the mediating effect of patient satisfaction on HFR was not indicated.

Chapter Five

Discussion and Conclusion

This chapter begins with a summary of results for the current study and discussion of the main findings. Limitations of the study are discussed next followed by implications for future research. The conclusion of this study is presented at the end of this chapter.

Summary of the Study

The purpose of this study was to examine if nurses EI is significantly related to HFR. The hypothesized conceptual model proposed that there is an association between nurse EI, a structure variable, and the outcome variable HFR. It was further hypothesized that the relationship between nurses' EI and HFR is mediated through patient satisfaction. Descriptive statistics, one-way ANOVA, and Pearson's correlations were used to evaluate the aims of this study. Further testing was conducted using the generalized estimating equation model and the linear mixed model to correct for correlated observations.

Heart Failure readmissions comprise a significant portion of all cause hospital readmissions (Jencks, Williams, & Coleman, 2009). Several authors have described the results of comprehensive interventions to decrease readmission rates and include patient education, medication reconciliation, monitoring of symptoms, and scheduling of follow up appointments prior to hospital discharge (Hansen, Young, Hinami, Leung, & Williams, 2011; Wakefield, Boren, Groves, & Conn, 2013). However, findings of these studies on how to reduce HFR rates

are inconsistent. The current study examined new constructs to the study of this problem and is the first to examine the relationship between nurses EI and HFR. The current study found the level of nurses EI was within the average range and is consistent with findings reported by other researchers (Adams and Iseler, 2014; Codier, Kamikawa, Kooker, & Shoultz, 2009; Munro, 2011). Analysis of aim 1, examine the relationship between nurse EI and the percent of 30-day all-cause readmissions for HF, suggests that a higher level of nurse EI may be associated with no HF readmissions, however the relationship was not significant when accounted for correlated observations.

Therefore, the Aim 1 hypothesis of "There is a direct, significant inverse relationship between nurse EI and percent of 30- day all-cause readmissions for HF" was not supported.

Few studies have examined the relationship between nurse EI and patient satisfaction with their care. Adams and Iseler (2014) evaluated the relationship between nurses' EI and patient satisfaction at the hospital unit level. This study used the MSCEIT to measure EI which conceptualizes EI as ability. Patient satisfaction was measured with the HCHAPS survey. These authors reported a non-significant relationship among the variables. In an earlier study, Munro (2011) explored the relationship between nurse manager EI measured with the MSCEIT and patient satisfaction with care. This study used a different measure of patient satisfaction and found a significant relationship between the two variables. The second aim of the current study was to examine the relationship between nurse EI and patient satisfaction with nursing care by hospital unit. Non-significant positive relationships were found between nurses EI and each of the five patient satisfaction variables: rate hospital, nurse courtesy and respect, nurse listen, nurse explain, and nurse communication. This trend continued when corrected for correlated

observations. Thus, the hypothesis "There is a direct significant positive relationship between nurse EI and patient satisfaction with nursing care by unit" was not supported.

There is also limited empirical evidence regarding the relationship between patient satisfaction with care and HFR. Boulding (2011) found that greater overall patient satisfaction at the hospital level was associated with lower risk of standardized readmission rates for HF. A second study demonstrated similar results: as patient satisfaction scores increased, financial penalties for HFR decreased (Ganey, 2012). Both studies demonstrated significant relationships at the hospital level. These studies used the HCAHPS to measure patient satisfaction. Wong (2010) reported that subjective health outcome had a significant effect on readmissions and that the relationship was mediated through patient satisfaction. This study used a five point scale to measure patient satisfaction.

Analysis of the third aim of the current study to examine the relationship between patient satisfaction with nursing care and rate of 30-day all-cause readmissions for HF by unit, revealed a non-significant relationship among each of the five patient satisfaction variables and HFR rates. When adjusted for correlated observations, the odds of HFR decreased with one unit increase in four of the five variables: rate hospital, nurses' level of courtesy and respect, nurses' ability to listen, and nurse communication skills. There was no predicted effect of the variable explain. Thus, the hypothesis, there is a direct significant inverse relationship between patient satisfaction with nursing care and percent 30-day all cause readmissions for HF by unit was not supported. Finally, the hypothesized relationship between nurse EI and HFR was non-significant. Therefore, exploration of the mediating effect of patient satisfaction on HFR could not be conducted.

Limitations

There are several limitations that should be considered when interpreting the results of the current study. These limitations include the sample employed, the study measures used and the overall study design. Each of these areas is discussed in the following sections.

Sample and setting. This study used nurses employed in one setting located in a single geographic location thus possibly limiting the generalizability of the sample to the larger population of nurses. Further, participation in this study was completely voluntary and thus self-section bias by the participating nurses is possible. The study sought to incorporate the ratings from 472 RNs who were employed on 11-units in a major urban hospital. A total of 138 nurses responded to the survey resulting in a moderate response rate of 29%. However, this is a conservative estimate of the response rate as only those nurses that were employed by the hospital for the prior 14-months were eligible to complete the survey. It is not known how many of the 472 nurses were employed for the prior 14-months and thus eligible for the study. There was also variability in the response rate across the 11-units ranging from 18% to 42% and this was not accounted for in the study. The sample size of this study was small and may have contributed to findings that were non- significant. The limited sample and the location of the study may inhibit generalizability of the findings and should be considered when reviewing the results. The inclusion of a single study setting may also limit the ability to generalize findings of this study to the overall population of registered nurses.

Another factor possibly limiting the generalizability of the current sample to the larger population is the race of the study participants and how it compares to the larger population of nurses. The majority of nurses who participated in this study were white (75%) followed by Asian (17.2%). A recent national study conducted by the U.S. Department of Health and Human

Services reported that the majority of nurses in the U.S. were also white (83.2%) while 5.8% reported that they were Asian (U.S. Department of Health and Human Services Health Resources and Services Administration, 2010). Additionally, a workforce study conducted by the Florida Center for Nursing (2014) found that the majority of nurses who were employed as a nurse in the state of Florida were also white (66%) and that 7.3% were Asian. Thus, the races of the sample of nurses in the current study tend not to reflect the proportion of races represented in the population of nurses in the U.S. and in the state where this study was conducted. In addition, EI scores among ethnic and racial groups have been reported with slightly higher scores reported for individuals who indicated their ethnicity and race as black and Hispanic (MHS, 2013). It is possible that the race and ethnicity of this sample may have influenced the association of nurses' EI and the outcome variables of this study. Also affecting the generalizability of the sample is the education level of the sample. The average nursing degree earned by participants in this study was much higher from that of the population of nurses at the national and state level. Sixty four percent of participants in this study reported a BSN as their highest earned nursing degree. This is greater than that reported at the both the national level (36.8%) (U.S. Department of Health and Human Services Health Resources and Services Administration, 2010) and for the state of Florida (35%) (Florida Center for Nursing, 2014). In addition, 5.9% of participants' reported that their highest earned nursing degree was a graduate degree while 13.2% of nurses at the national level and 4.8% at the state level reported having earned a graduate degree in nursing. It is possible that a higher level of nursing education may have a positive influence on how nurses care for patients with HF and how patients perceive satisfaction with nursing care and thus limit the generalizability of the study findings.

Another limitation of this study is that not all nurses cared for patients with HF during the timeframe covered by the study period. The percent of nurses who reported they have discharged a patient with heart failure in the last year ranged from 78.6% on one unit to 100% on six other the units. This study examined the relationship between nurses EI and HF readmissions and inclusion of nurses who have not cared for a patient with HF may have weakened the association between the two variables. In community-based and uncontrolled settings it is often difficult to control which patients are served by nurses, therefore this factor is an artifact of conducting research in "real-world settings." While few in number, including the 12 nurses without HF experience may have influenced the results of the study. The percent of respondents who reported not discharging a patient with HF was 9% of the sample.

Design and study measures. The current study utilized a descriptive/correlational design rather than a controlled study with random assignment but was appropriate to examine the aims of this study. A correlational study explores the type and magnitude of linear relationships among two or more variables (Burnes & Grove, 2005). Further, it should be kept in mind that by using this approach, the study design was unable to determine causality. There are also limitations related to the study instruments. The EQ-i 2.0 is a 133 item instrument that takes approximately 20 minutes to complete. In addition to the EQ-i 2.0, participants were asked to complete 11 items to describe themselves demographically. The number of items included in the survey may have contributed to respondent burden. This response burden may have kept nurses from participating in the study and may have influenced the attention levels of the nurses who did respond resulting in them quickly answering the items to get through it fast (survey fatigue). Respondents were instructed to complete the survey in a single session. Although all survey

items were completed, it is possible that some nurses completed the survey over several sessions due to survey fatigue that could have influenced the integrity of the data.

Another limitation of this study is that variables that could have influenced HF readmissions rates were not included. That is, there are many reasons for patients with HF to be readmitted to the hospital and these factors were not accounted for in the study. Some of these variables include patient education about HF, socioeconomic status, patient's race, discharge planning, the provision of home health visits, and the ability of families to help to care for these patients in the home setting, and nurse workforce variables such as staffing levels and turnover. These variables may have been able to explain a portion of the variance in the outcome variable.

It should also be kept in mind that the HF readmissions rates at this hospital over the 14-month study period were rare. Eighteen percent, of the observations had no HF patients and of those that did, 64% had no patients that were readmitted. In addition, HF readmissions to hospitals other than the study site were not able to be accounted for thus limiting this true rate of HFR. The results of this study may have been different if the study setting was not restricted to a single hospital and if the duration of the study was longer. Additionally, the three most common index diagnoses that are assessed for readmission to hospitals include Acute Myocardial Infarction (AMI), HF, and Pneumonia. This study restricted readmission to those with HF. The design restricted the sample to HF readmission because if the other two conditions were added to the outcome variable the results may have been clouded by type of readmission rather than the association with EI. Inclusion of readmissions for other index admissions such as Acute Myocardial Infarction and Pneumonia may have led to a different understanding of the relationship between nurses EI and hospital readmissions.

Use of extant data sets is also a limitation of this study. All of the variables in this study with the exception of measuring the level of nurse EI were gathered from extant hospital data sets that were not created for the purpose of research. Measurement and sampling errors are inherent in extant data sets and may have lessened the internal validity of the findings.

A final limitation of the current study is a lack of variation among the HCAHPS items. Variability of all HCAHPS items were low (SD = 0.15) for the item courtesy and respect, (SD = 0.55) for the item rate hospital. This lack of variation among the HCAHPS variables may have contributed to the absence of significant findings.

Recommendations for Further Research

This study may serve as a foundation for further examination of the relationship between the variables nurse EI, patient satisfaction, and HFR. Specific recommendations include longitudinal studies with larger sample sizes of nurses and patients who were readmitted after an index admission of HF. Also, consideration of confounding variables such as patient's comorbidities and acuity of illness, and nurse's workload should be included in order to gain a fuller understanding of the variance in the outcomes variables. This study was conducted in a large Magnet designated teaching hospital in the south eastern U.S. The demographic characteristics of the sample of nurses did not reflect those of nurses in the state where the study was conducted or with nurses in the population of the U.S. Further studies should include nurses who live in different geographic locations and work in community and for profit hospitals. Although this study was restricted to HFR, inclusion of AMI and pneumonia readmissions may lead to a further knowledge of how nurse EI may be related to readmissions overall. Further studies should include analysis at the patient level in order to more fully understand the cause and effect relationships of variables on HFR.

Although findings of the current study were not statistically significant, the positive trend for level of nurse EI and HFR as well as the level of nurse EI and patient satisfaction is important. Further research may also include examining the effect of interventions to increase the EI of nurses. In addition, examination of EI among nursing students should be explored for enhancement during their education programs.

Conclusions

HFR is an important problem facing hospitals. Previous research has suggested that new ways to address this challenge are needed. This study is the first to examine the association between nurse EI and HFR. Findings, although statistically non-significant, do suggest that higher nurse EI may be associated with lower odds of HFR. A second finding of the current study was a non-significant positive relationship between nurse EI and all variables of patient satisfaction. The conceptual model of EI used in this study is an ability/trait model. Thus, is possible that nurse EI may be enhanced through training. Such training may lead to improved patient outcomes. Results of this study indicate that further research in the arena of nurse EI and patient outcomes is warranted.

References

Adams, K., & Iseler, J. (2014).The relationship of bedside nurses' emotional intelligence with quality of care. *Journal of Nurses Care Quality*, 29(2), 174-181.

Aiken, L. H., Sermeus, W., Van den Heede, K., Sloane, D. M., Busse, R., McKee, M., ... & Kutney-Lee, A. (2012). Patient safety, satisfaction, and quality of hospital care: Cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. *BMJ: British Medical Journal*, *344*, 45-53.

Agency for Healthcare Research and Quality. (2003). HCAHPS Three-state pilot study analysis results.Retrieved from http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/downloads/Hospital3State_Pilot_Analysis_Final200512.pdf

American Nurses Association (2013). ANA indicator history. Retrieved from .http://www.nursingworld.org/MainMenuCategories/ThePracticeofProfessionalNursing/PatientSafetyQuality/Research-Measurement/The-National-Database/Nursing-Sensitive-Indicators_1/ANA-Indicator-History

Assyag, P., T. Renaud, Cohen Solal, A., Viaud, M., Krys, H., Bundalo, A., . . . Cohen, A. (2009). RESICARD: East Paris network for the management of heart failure: Absence of effect on mortality and rehospitalization in patients with severe heart failure admitted following severe decompensation. *Archives of Cardiovascular Diseases, 102*(1), 29-41. doi: 10.1016/j.acvd.2008.10.013.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Bar-On, R. (2004). The Bar-On Emotional Quotient Inventory (EQ-i). In Geher, G. (Ed), *Measuring emotional intelligence: Common ground and controversy* (pp. 115-145). Hauppauge, New York, NY: Nova Science.

Bar-On, R. (2006). The Bar-On model of emotional-social intelligence (ESI) 1. *Psicothema, 18*(Suplemento): 13-25.

Boev, C. (2012). The relationship between nurses' perception of work environment and patient satisfaction in adult critical care. *Journal of Nursing Scholarship, 44*(4),368-375.

Boulding, W., Glickman, W. S., Manary, M. P., Schulman, K. A., & Staelin, R. (2011). Relationship between patient satisfaction with inpatient care and hospital readmission within 30 Days. *American Journal of Managed Care, 17*(1), 41-48.

Bradley, E. H., Yakusheva, O., Horwitz, L. I., Sipsma, H., & Fletcher, J. (2013). Identifying patients at increased risk for unplanned readmission. *Medical Care, 51*(9), 761-766.

Braun, E., Baidusi, A., Alroy, G., & Azam, Z. (2009). Telephone follow-up improves patients satisfaction following hospital discharge. *European Journal of Internal Medicine, 20*(2), 221-225. doi: 10.1016/j.ejim.2008.07.021

Burns, N., & Grove, S. (2005). *The practice of nursing research: Conduct, critique, and utilization*. St. Louis, Missouri: Elsevier Saunders.

Centers for Medicare & Medicaid Services (2013). HCAHPS: Patients' Perspectives of Care Survey.Retrieved from http://www.hcahpsonline.org/surveyinstrument.aspx

Centers for Medicare & Medicaid Services. (2013). Hospital quality initiative .Retrieved from http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/index.html?redirect=/hospitalqualityinits/.

Chatterjee, P., Joynt, K. E., Orav, E. J., & Jha, A. K. (2012). Patient experience in safety-net hospitals. Implications for improving care and value-based purchasing. *Archives of Internal Medicine, 172(16), 1204-1210.*

Chen, L. M., Jha, A. K., Guterman, S., Ridgway, A., Orav, J., & Epstein, A. (2010). Hospital cost of care, quality of care, and readmission rates: Penny wise and pound foolish? *Archives of Internal Medicine, 170*(4), 340. doi:10.1001/archinternmed.2009.511.

Cloonan, P., Wood, J., & Riley, J. (2012). Reducing 30-day readmissions: Health literacy strategies. *The Journal of Nursing Administration*, 43(7-8), 382-387. DOI: 10.1097/NNA.0b013e31829d6082

Codier, E., Kamikawa, C., & Kooker, B. M. (2011). The impact of emotional intelligence development on nurse managers. *Nursing Administration Quarterly, 35*(3), 270-276.

Codier, E., Kamikawa, C., Kooker, B. M., & Shoultz, J. (2009). Emotional intelligence, performance, and retention in clinical staff nurses. *Nursing Administration Quarterly, 33*(4), 310-316.

Codier, E., Muneno, L., Franey, K., & Matsuura, F. (2010). Is emotional intelligence an important concept for nursing practice? *Journal of Psychiatric and Mental Health Nursing, 17*(10), 940-948.

Coleman, E., Parry, C., Chalmers, S., & Min, S. (2006).The care transitions intervention: Results of a randomized controlled trial. *Archives of Internal Medicine,166*(17),1822-1828.

Costa Jr, P. T., & McCrae, R. R. (1992). Four ways five factors are basic. *Personality and Individual Differences*, *13*(6), 653-665.

Cummings, G. G., Midodzi, W. K., Wong,C.A., & Estabrooks, C. A. (2010). The contribution of hospital nursing leadership styles to 30-day patient mortality. *Nursing Research*, *59*(5), 331-339. DOI: 10.1097/NNR.0b013e3181ed74d5

Davis, K. K., Mintzer, M., Himmelfarb, C. R. D., Hayat, M. J., Rotman, S., & Allen, J. (2012). Targeted intervention improves knowledge but not self-care or readmissions in heart failure patients with mild cognitive impairment. *European Journal of Heart Failure*, *14*(9), 1041-1049.

Delaney, C. & Apostolidis, B. (2010). Pilot testing of a multicomponent home care intervention for older adults with heart failure: An academic clinical partnership. *Journal of Cardiovascular Nursing* , *25*(5), E27-E40. DOI: 10.1097/JCN.0b013e3181da2f79

Denscombe, M. (2009). Item non-response rates: a comparison of online and paper questionnaires. *International Journal of Social Research Methodology* 12(4): 281-291.

Deshpande, S. P., & J. Joseph (2009). Impact of emotional intelligence, ethical climate, and behavior of peers on ethical behavior of nurses. *Journal of Business Ethics*, *85*(3), 403-410.

DeWalt, D. A., Schillinger, D., Ruo, B., Bibbins-Domingo, K., Baker, D. W., Holmes, G. M., & Pignone, M. (2012). Multisite randomized trial of a single-session versus multisession literacy-sensitive self-care intervention for patients with heart failure clinical perspective. *Circulation*, *125*(23), 2854-2862.

Di Fabio, A., & L. Palazzeschi (2012). Organizational Justice: personality traits or emotional entelligence? An empirical study in an italian hospital context. *Journal of Employment Counseling*, *49*(1), 31-42.

Elliott, M. N., Lehrman, W. G., Beckett, M. K., Goldstein, E., Hambarsoomian, K., & Giordano, L. A. (2012). Gender differences in patients' perceptions of inpatient care. *Health Services Research*, *47*(4), 1482-1501.

Erkutlu, H., & Chafra , J. (2012).The impact of team empowerment on proactivity: The moderating roles of leader's emotional intelligence and proactive personality. *Journal of Health Organization and Management*, 26(5), 560-577.

Ezzatabadi, M. R., Bahrami, M A., Hadizadeh, F., Arab, M., Nasiri, S., Amiresmaili, M., & Tehrani, G.. (2012). Nurses' emotional intelligence impact on the quality of hospital services. *Iranian Red Crescent Medical Journal, 14*(12), 758-763. doi: 10.5812/ircmj.926

Florida Center for Nursing (2014). Florida RN Supply. Retrieved from http://www.flcenterfornursing.org/StatewideData/NurseSupplyReports.aspx

Forum, N. Q. (2004). National voluntary consensus standards for nursing-sensitive care: An initial performance measure set. Retrieved from http://www.qualityforum.org/Publications/2004/10/National_Voluntary_Consensus_Standards_for_Nursing-Sensitive_Care__An_Initial_Performance_Measure_Set.aspx

Ganey, P. (2010). Inpatient (IN) survey psychometrics report. Unpublished manuscript.

Ganey, P. (2012). The Relationship between HCAHPS performance and readmission penalties. Retrieved from http://www.pressganey.com/researchResources/white-papers.aspx

Ganey, P. (2013).The rising tide measure-communication with nurses. 2013, from http://www.pressganey.com/researchResources/white-papers/white-papers-for-hospitals/communication-with-nurses-rising-tide-measure.aspx.

Gardner, G., Woollett, K., Daly, N., & Richardson, B. (2009). Measuring the effect of patient comfort rounds on practice environment and patient satisfaction: A pilot study. *International Journal of Nursing Practice*, *15*(4), 287-293.

Geher, G. (2004). *Measuring emotional intelligence: Common ground and controversy*. Hauppage, NY:Nova Science Pub Inc.

Gheorghiade, M., , Vaduganathan, M., Fonarow, G., & Bonow, W.(2013). Rehospitalization for heart failure: Problems and perspectives. *Journal of the American College of Cardiology, 61*(4), 391-403. doi: 10.1016/j.jacc.2012.09.038

Goldstein, E., Elliott, M. N., Lehrman, W. G., Hambarsoomian, K., & Giordano, L. A. (2010). Racial/ethnic differences in patients' perceptions of inpatient care using the HCAHPS survey. *Medical Care Research and Review*, *67*(1), 74-92.

Görgens-Ekermans, G., & Brand (2012). Emotional intelligence as a moderator in the stress–burnout relationship: A questionnaire study on nurses. *Journal of Clinical Nursing, 21*(15-16), 2275-2285.

Grafft, C. A., McDonald, F. S., Ruud, K. L., Liesinger, J. T., Johnson, M. G., & Naessens, J. M. (2010). Effect of hospital follow-up appointment on clinical event outcomes and mortality. *Archives of Internal Medicine, 170*(11), 955.

Haber, J. (2005). Sampling. In Lobiondo-Wood, G., & Haber, J. (Eds.), *Nursing research: Methods, critical appraisal* (pp. 239-263). St. Louis, Missouri: Mosby.

Hanna, M. N., González-Fernández, M., Barrett, A. D., Williams, K. A., & Pronovost, P. (2012). Does patient perception of pain control affect patient satisfaction across surgical units in a tertiary teaching hospital? *American Journal of Medical Quality*, *27*(5), 411-416.

Hansen, L. O., Young,R., Hinami, K., Leung, A., & Williams, M. V. (2011). Interventions to reduce 30-day rehospitalization: A systematic review. *Annals of Internal Medicine, 155*(8), 520-528. doi: 10.7326/0003-4819-155-8-201110180-00008.

Harrison, P., Hara, P., Pope, J., Young, M., & Rula, E. (2011). The impact of postdischarge telephonic follow-up on hospital readmissions. *Population Health Managemen,* 14(1), 27-32. doi: 10.1089/pop.2009.0076

Harper, M., &Jones-Schenk (2012). The emotional entelligence profile of successful staff nurses. *Journal of Continuing Education in Nursing,* 43(8), 354-362.

Heffernan, M., Quinn Griffin, M. T., McNulty, S. R., & Fitzpatrick, J. J. (2010). Self-compassion and emotional intelligence in nurses. *International Journal of Nursing Practice*, *16*(4), 366-373.

Hernandez, A., Greiner, M., Fonarow, G., Hammil, B., Heidenreich, P., Yancy, C., . . . Curtis, L. (2010). Relationship between early physician follow-up and 30-day readmission among Medicare beneficiaries hospitalized for heart failure. *JAMA: The Journal of the American Medical Association, 303*(17),1716-1722. doi: 10.1001/jama.2010.533.

Hurley, J. (2013). Perceptual shifts of priority: A qualitative study bringing emotional intelligence to the foreground for nurses in talk-based therapy roles. *Journal of Psychiatric and Mental Health Nursing*, *20,* 97-104.

Institute of Medicine. Committee on Quality of Health Care in America (2001). *Crossing the quality chasm: A new health system for the 21st century*. Washington, D C: National Academies Press.

Jack, B., Chetty, V., Anthony, D., Greenwald, J. L., Sanchez, G. M., Johnson, A. E., . . . Manesseh, C. (2009). A reengineered hospital discharge program to decrease rehospitalization: A randomized trial. *Annals of Internal Medicine*,*150*(3),178-187.

Jain, R., Evenson, A., Biddison, E., Dala, D., Kelly, K. M., Karmand, A. J., . . . Plantholt, S. (2010). Efficacy of multidisciplinary outpatient management (MOM) program in long term heart failure care. *Southern Medical Journal, 103*(2), 131-137. doi: 10.1097/SMJ.0b013e3181c98ff3.

Jencks, S. F., Williams, M. V., & Coleman, E. A. (2009). Rehospitalizations among patients in the Medicare fee-for-service program. *New England Journal of Medicine, 360*(14), 1418-1428.

Jha, A. K., Orav, E. J., & Epstein, A. M. (2009). Public reporting of discharge planning and rates of readmissions. *New England Journal of Medicine, 361*(27), 2637-2645.

Jha, A. K., Orav, E. J., Zheng, J., & Epstein, A. M. (2008). Patients' perception of hospital care in the United States. *New England Journal of Medicine, 359*(18), 1921-1931.

Jones,T., & Argentino, D. (2010). Nurse-to-nurse hostility, confrontational anxiety, and emotional intelligence: An integral, descriptive pilot study. *Journal of PeriAnesthesia Nursing, 25*(4), 233-241.

Joynt, K. E., Orav, E. J., & Jha, A. K. (2011). Thirty-day readmission rates for Medicare beneficiaries by race and site of care. *JAMA: The Journal of the American Medical Association, 305*(7), 675-681.

Kaiser, H. N. (2012). Medicare to penalize 2,217 hospitals for excess readmissions. 2013, from http://www.kaiserhealthnews.org/stories/2012/august/13/medicare-hospitals-readmissions-penalties.aspx.

Klinkenberg, W. D., Boslaugh, S., Waterman, B. M., Otani, K., Inguanzo, J. M., Gnida, J. C., & Dunagan, W. C. (2011). Inpatients' willingness to recommend: A multilevel analysis. *Health Care Management Review, 36*(4), 349-358.

Kocher, R., & Adashi, E. (2011). Hospital readmissions and the affordable care act. *JAMA: The Journal of the American Medical Association, 306*(16), 1794-1795.

Koehler, B., Richter, K., Youngblood, L., Cohen, B. A., Prengler, I. D., Cheng, D., & Masica, A. L. (2009). Reduction of 30-day postdischarge hospital readmission or emergency department (ED) visit rates in high-risk elderly medical patients through delivery of a targeted care bundle. *Journal of Hospital Medicine, 4*(4), 211-218. doi: 10.1002/jhm.427.

Kraemer, H. C., Stice, E., Kazdin, A., Offord, D., & Kupfer, D. (2001). How do risk factors work together? Mediators, moderators, and independent, overlapping, and proxy risk factors. *American Journal of Psychiatry, 158*(6), 848-856.

Krumholz, H. M., Merrill, A. R., Schone, E. M., Schreiner, G. C., Chen, J., Bradley, E. H., ... & Drye, E. E. (2009). Patterns of hospital performance in acute myocardial infarction and heart failure 30-day mortality and readmission. *Circulation: Cardiovascular Quality and Outcomes, 2*(5), 407-413.

Kutney-Lee, A., McHugh, M. D., Sloane, D. M., Cimiotti, J. P., Flynn, L., Neff, D. F., & Aiken, L. H. (2009). Nursing: a key to patient satisfaction. *Health Affairs, 28*(4), w669-w677.

Laschinger, H. S., Hall, L. M., Pedersen, C., & Almost, J. (2005). A psychometric analysis of the patient satisfaction with nursing care quality questionnaire: An actionable approach to measuring patient satisfaction. *Journal of Nursing Care Quality, 20*(3), 220-230.

LoBiondo-Wood, G., J. Haber, et al. (2005). Nonexperimental designs. In Lobiondo-Wood, G., & Haber, J. (Eds.), *Nursing research: Methods, critical appraisal, and utilization*, (pp. 221-235). St. Louis, MO: Mosby.

McHugh, M. D., & Ma, C. (2013). Hospital nursing and 30-day readmissions among medicare patients with heart failure, acute myocardial infarction, and pneumonia. *Medical Care, 51*(1), 52-59.

MHS (2013) EQ-i 2.0 Users Handbook. Retrieved from Multi-Health Systems Inc. http://ei.mhs.com/eq20_manual/

Misky, G. J., Wald, H., & Coleman, E. (2010). Post-hospitalization transitions: Examining the effects of timing of primary care provider follow-up. *Journal of Hospital Medicine, 5*(7), 392-397. doi: 10.1002/jhm.666.

Mittler, J. N., O'Hora, J. L., Harvey, J., Press, M., Volpe, K., & Scanlon, D.et al. (2013).Turning readmission reduction policies into results: Some lessons from a multistate initiative to reduce readmissions. *Population Health Management*, *16*,255-260. doi: 10.1089/pop.2012.0087

Munro, J. C. (2011). Nurse manager emotional Intelligence as a predictor to registered nurse job satisfaction and RN perceptions of the practice environment and the relationship to patient satisfaction and RN perceptions of the practice enviornment and the relationship to patient, nursing, and hospital outcomes.Retrieved from Graduate School Theses and Dissertations. http://scholarcommons.usf.edu/etd/3259

Nooryan, K., Gasparyan, K., Sharif, F., & Zoladl, M. (2012). Controlling anxiety in physicians and nurses working in intensive care units using emotional intelligence items as an anxiety management tool in Iran. *International Journal of General Medicine, 5*, 5.

Nunez-Smith, M., Bradley, E. H., Herrin, J., Santana, C., Curry, L. A., Normand, S. L. T., & Krumholz, H. M. (2011). Quality of care in the US territories. *Archives of Internal Medicine*, *171*(17), 1528.

Oetker-Black, S., & Petrochuk, M. (2012). A descriptive analysis of nursing satisfaction: First-time versus non-first-time medical-surgical patients. *Health Marketing Quarterly, 29*(4), 303-310.

Panella, M., Marchisio, S., Demarchi, M., Manzoli, L., & Di Stanislao, F. (2009). Reduced in-hospital mortality for heart failure with clinical pathways: The results of a cluster randomised controlled trial. *Quality and Safety in Health Care, 18*(5), 369-373. doi:10.1136/qshc.2008.026559

Parry, C., Min, S. J., Chugh, A., Chalmers, S., & Coleman, E. A. (2009). Further application of the care transitions intervention: Results of a randomized controlled trial conducted in a fee-for-service setting. *Home Health Care Services Quarterly, 28*(2-3), 84-99. doi: 10.1080/01621420903155924.

Powell, L. H., Calvin, J. E., Richardson, D., Janssen, I., de Leon, C., Flynn, K. J., . . . Avery, E. (2010). Self-management counseling in patients with heart failure. *JAMA: The Journal of the American Medical Association, 304*(12), 1331-1338. doi:10.1001/jama.2010.1362.

Purdy, N., Spence Laschinger, H. K., Finegan, J., Kerr, M., & Olivera, F. (2010). Effects of work environments on nurse and patient outcomes. *Journal of Nursing Management, 18*(8), 901-913.

Quality Net (2013). Hospital Value-Based Purchasing . Retrieved from https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1228772039937

Quoidbach, J., & Hansenne, M. (2009).The impact of trait emotional intelligence on nursing team performance and cohesiveness. *Journal of Professional Nursing,* 25(1), 23-29.

Riggio, R. E., & Carney, D. R. (2003). *Social skills inventory manual*. Retrieved from http://www.mindgarden.com/products/ssins.htm.

Schoenfelder, T., Klewer, J., & Kugler, J. (2011). Determinants of patient satisfaction: A study among 39 hospitals in an in-patient setting in Germany. *International Journal for Quality in Health Care*, *23*(5), 503-509.

Sharma, G., Kuo, Y.F., Freeman, J., Zhang, D., & Goodwin, J. (2010). Outpatient follow-up visit and 30-day emergency department visit and readmission in patients hospitalized for chronic obstructive pulmonary disease. *Archives of Internal Medicine, 170*(18), 1664-1670. doi: 10.1001/archinternmed.2010.345

Shih, T.-H., & Fan, X. (2008). Comparing response rates from web and mail surveys: A meta-analysis. *Field methods,* 20(3), 249-271.

Silverstein, M. D., Qin, H., Mercer, S. Q., Fong, J., & Haydar, Z. (2008). Risk factors for 30-day hospital readmission in patients ≥ 65 years of age. *Proceedings (Baylor University. Medical Center)*, *21*(4), 363.

Sorknaes, A. D., Madsen, H., Hallas, J., Jest, P., & Hansen, N. (2011). Nurse tele-consultations with discharged COPD patients reduce early readmissions–an interventional study. *The Clinical Respiratory Journal, 5*(1), 26-34. DOI: 10.1111/j.1752-699X.2010.00187.x

Sorra, J., Khanna, K., Dyer, N., Mardon, R., & Famolaro, T. (2012). Exploring relationships between patient safety culture and patients' assessments of hospital care. *Journal of Patient Safety, 8*(3), 131-139.

Stauffer, B. D., Fullerton, C., Fleming, N., Ogola, G., Herrin, J., Stafford, P. M., & Ballard, D. J. (2011). Effectiveness and cost of a transitional care program for heart failure: A prospective study with concurrent controls. *Archives of Internal Medicine, 171*(14), 1238.

Stough, C., D. H. Saklofske, et al. (2009). *Assessing emotional intelligence: Theory, research, and applications.* New York, NY*:* Springer.

Suhonen, R., Papastavrou, E., Efstathiou, G., Tsangari, H., Jarosova, D., Leino-Kilpi, H. & Merkouris, A. (2012). Patient satisfaction as an outcome of individualized nursing care. *Scandinavian Journal of Caring Sciences*, *26*(2), 372-380.

Suter, L. G., Vellanky, S., Shu-Xia, Strait, K., Eddy, E., Okai, M., . . . Bernhiem, S. (2012). Medicare hospital quality chartbook 2012 performance report on outcome measures. 2013, from http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Downloads/MedicareHospitalQualityChartbook2012.pdf.

United States Department of Labor Bureau of Labor Statistics (2013). Occupational employment and wages.Retrieved from http://www.bls.gov/news.release/pdf/ocwage.pdf

United States Department of Health and Human Services Health Resources and Servies Administration. Initial findings from the 2008 national sample survey of registered nurses Retrieved from http://bhpr.hrsa.gov/healthworkforce/rnsurveys/rnsurveyinitial2008.pdf

Upenieks, V., & Abelew, S. (2006). The magnet designation process a qualitative approach using Donabedian's conceptual framework. *The Health Care Manager*, 25(3), 243-253.

van Dusseldorp, L. R., van Meijel, B. K., & Derksen, J. J. (2011). Emotional intelligence of mental health nurses. *Journal of Clinical Nursing*, *20*(3-4), 555-562.

Wakefield, B. J., Boren, S. A., Groves, P., & Conn, V. (2013). Heart failure care management programs: A review of study interventions and meta-analysis of outcomes. *Journal of Cardiovascular Nursing, 28*(1), 8-19. doi: 10.1097/JCN.0b013e318239f9e1.

Wakefield, B. J., Boren, S. A., Groves, P. S., & Conn, V. S. (2013). Heart failure care management programs: A review of study interventions and meta-analysis of outcomes. *Journal of Cardiovascular Nursing*, *28*(1), 8-19.

Wang, S. P., Lin, L. C., Lee, C. M., & Woo, S. C. (2011). Effectiveness of a self-care program in improving symptom distress and quality of life in congestive heart failure patients: A preliminary study. *Journal of Nursing Research, 19*(4), 257-266. doi: 10.1097/JNR.0b013e318237f08d.

Wong, F. K., Chan, M. F., Chow, S., Chang, K., Chung, L., Lee, W. M., & Lee, R. (2010). What accounts for hospital readmission? *Journal of Clinical Nursing*, *19*(23-24), 3334-3346.

You, L. M., Aiken, L. H., Sloane, D. M., Liu, K., He, G. P., Hu, Y. & Sermeus, W. (2013). Hospital nursing, care quality, and patient satisfaction: Cross-sectional surveys of nurses and patients in hospitals in China and Europe. *International Journal of Nursing Studies*, *50*(2), 154-161.

Zhu, X. W., You, L. M., Zheng, J., Liu, K., Fang, J. B., Hou, S. X., ... & Zhang, L. F. (2012). Nurse staffing levels make a difference on patient outcomes: a multisite study in Chinese hospitals. *Journal of Nursing Scholarship, 44(3)*, 266-273.

Appendix A

Tables 6 – 8

Table 6.

Percent of full-time and part –time status and shift commonly worked by participating nurses (n=136) by hospital unit

Unit	Work Status		Shift most frequently worked			
	Full-time	Part-Time [(1)]	7am to 3pm	7am to 7pm	7pm to 7am	Other
1	100%		7%	64%	29%	
2	100%			79%	21%	
3	100%			100%		
4	67%	33%		67%	33%	
5	100%			78%	22%	
6	100%		27%	60%	13%	
7	88%	12%	12%	63%	25%	
8	100%			71%	29%	
9	100%			58%	42%	
10	100%		17%	42%	33%	8%
11	100%			75%	25%	
Total/mean	97.8%	2.2%	5.9%	66.9%	26.5%	

[(1)]Part-Time is defined as less than 32 hours per week

Appendix A (continued)

Table 7. Percent of nurse turnover by unit by month [1,]

Unit	Month														
	2013										2014				
	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	Total
1	0	0	0	0	0	5.66	0	0	0	0	2.94	0	0	0	6.05*
2	1.69	0	9.26	0	3.64	3.03	1.96	1.72	0	1.54	1.49	0	6.35	3.33	35.46
3	0	0	3.85	3.57	3.45	0	3.70	0	0	0	0	0	6.90	3.45	24.62
4	0	0	0	0	2.94	3.13	0	0	2.94	3.13	0	0	0	0	11.86*
5	5.00	0	0	5.26	5.41	2.70	2.70	0	0	4.76	2.33	2.33	2.27	2.13	34.33
6	Missing	0	0	0	0	2.33	0	2.22	0	0	0	4.55	4.26	0	16.72*
7	2.63	0	0	0	2.44	0	0	0	0	0	2.27	2.17	4.44	0	14.24*
8	2.22	2.33	0	0	4.17	0	2.13	2.13	2.17	0	0	2.27	2.22	2.08	21.77
9	1.59	1.59	0	0	1.59	0	0	0	1.37	0	0	2.82	1.43*	2.99	13.28*
10	0	1.75	0	0	1.82	0	1.82	1.69	0	0	0	0	1.82*	0	8.87*
11	3.57	0	0	0	0	0	0	0	0	0	0	0	0	0	3.45*
Hospital Wide – all units	1.12	.870	1.32	.96	1.19	1.54	1.13	.87	1.04	.91	1.46	1.41	1.99	1.08	16.89

(1) Turnover percent was calculated on four job codes: Clinical nurse, NBE Clinical Nurse, Clinician and Clinical Unit Education Nursing. The percent was calculated by dividing the number of termination in these four job codes by the total number of active employees in these jobs. For example, in March 2013 for Unit 2, one position was terminated and there were 59 active employees in these job codes on this unit. Therefore, 1 divided by 59 = 1.69%.

(2) About 1,800 people work in these four positions throughout the hospital.

(3) 0 indicates no turnover, 57% (88/154) of the cells contain zeros.

(4) All none zero percentages for unit /month are higher than the percent hospital wide except for two incidents that are marked with * (* = lower than hospital wide rate)

Appendix A (continued)

Table 8. Average hours of direct care provided by RNs per patient day by unit and month.

Time	1 Acute Care for the Elderly	2 Transplant	3 Short Stay	4 Cardiac Telemetry	5 Cardiovascular Telemetry	6 Surgery Trauma	7 Primary Care	8 Coronary Care ICU	9 Surgical Oncology	10 Complex Medicine	11 Adult ICU Step Down
Mar 13	5.59	6.11	5.53	5.7	5.72	5.3	5.61	13.04	5.83	6.7	8.28
April 13	5.71	6.21	5.64	5.73	5.57	5.52	5.71	13.73	6.06	6.22	8.63
May 13	5.6	6.27	5.98	6.01	5.46	5.79	5.93	13.81	5.99	6.40	8.37
June 13	5.67	6.49	72.4	5.82	5.49	5.54	5.69	13.86	5.97	5.83	8.26
July 13	5.71	5.88	5.36	5.72	5.13	5.32	5.55	13.47	5.91	5.64	8.14
Aug 13	5.53	6.34	5.67	5.98	5.48	5.57	5.70	13.42	5.89	5.82	8.5
Sept 13	5.62	6.36	6.36	6.11	5.69	5.71	5.76	13.77	5.75	5.61	8.78
Oct 13	5.75	6.45	5.45	6.09	5.84	5.55	5.68	13.35	5.92	5.99	8.67
Nov 13	5.83	6.8	5.81	6.17	5.98	5.85	5.87	14.22	6.17	6.13	8.89
Dec 13	5.83	6.57	5.84	6.53	5.97	5.81	5.91	13.91	6.27	6.19	8.29
Jan 14	5.88	6.61	5.83	6.15	5.76	5.77	5.82	13.1	6.05	6.29	8.58
Feb 14	5.79	7.04	5.57	6	5.78	5.74	5.77	14.14	6.14	5.78	8.49
Mar 14	5.87	6.57	5.48	6.3	5.53	5.45	5.66	13.03	5.79	5.68	8.38
April 14	5.78	6.86	5.55	5.85	5.88	5.48	5.75	13.47	5.89	5.69	8.87
Mean RN direct care HPPD	5.7	6.4	5.7	6.0	5.6	5.6	5.7	13.5	5.9	5.9	8.5

Appendix B

Tables 10-14

Table 10. Means, standard deviations, and N's for **Self-Perception** Composite score and the three core subscales that comprise the composite scale by unit. The EQI-2 is standardized to a mean of 100 and SD of 15. Scores below 90 are considered "low" and scores above 110 are considered "high."

Unit	Self- Perception Composite Scale	Core Subscales		
		Self Regard	Self Actualization	Emotional Self Awareness
1 Acute Care for the Elderly	100.66 (14.29) N=15	103.60 (13.30)	99.00 (16.23)	100.40 (13.02)
2 Transplant	105.47 (12.96) N=19	107.68 (14.00)	102.42 (18.44)	106.63 (8.20)
3 Short Stay	104.85 (13.34) N=7	102.57 (13.32)	102.00 (17.60)	110.14 (8,37)
4 Cardiac Telemetry	99.44 (12.56) N=6	98.33 (9.89)	96.83 (14.13)	103.00 (8.83)
5 Cardiovascular Telemetry	102.88 (10.43) N=9	98.11 (16.780	105.11 (12.69)	106.77 (12.86)
6 Surgery Trauma	101.00 12.0 N=15	100.93 (13.22)	98.93 (13.95)	104.46 (9.70)
7 Primary Care	104.62 (17.54) N=8	105.12 (17.98)	106.37 (20.76)	103.62 (12.09)
8 Coronary Care ICU	101.85 (9.03) N=14	98.07 (11.86)	106.78 (10.76)	101.35 (9.31)
9 Surgical Oncology	103.37 (15.19) N=24	102.91 (19.13)	102.41 (18.41)	106.58 (11.81)
10 Complex Medicine	106.33 (9.93) N=12	102.16 (16.54)	107.41 (14.40)	110.08) (10.64)
11 Adult/ICU Step Down	100.22 (9.83) N=9	102.22 (12.64)	97.77 (12.92)	102.88 (8.20)
Mean (SD)	102.91 (12.55) N= 138			

Table 11. Means, standard deviations, and N's for **Self-Expression** Composite score and the three core subscales that comprise the composite scale by unit. The EQI-2 is standardized to a mean of 100 and SD of 15. Scores below 90 are considered "low" and scores above 110 are considered "high."

Unit	Self Expression Composite Scale	Core Subscales		
		Emotional Expression	Assertiveness	Independence
1 Acute Care for the Elderly	99.20 (11.20) N=15	103.53 (10.09)	97.66 (14.53)	96.06 (11.24)
2 Transplant	104.00 (13.1) N=19	106.52 (13.08)	101.10 (11.04)	100.52 (10.86)
3 Short Stay	102.00 (16.11) N=7	103.71 (17.89)	104.28 (11.04)	96.00 (10.86)
4 Cardiac Telemetry	94.33 (13.47) N=6	103.50 (10.07)	93.83 (15.34)	91.83 (25.52)
5 Cardiovascular Telemetry	94.33 (13.47) N=9	104.00 (11.48)	98.00 (13.73)	83.22 (18.54)
6 Surgery Trauma	96.53 (12.19) N=15	99.00 (11.86)	102.93 (9.45)	90.66 (20.13)
7 Primary Care	99.75 (10.37) N=8	102.25 (11.80)	100.25 (11.31)	17.46 (17.46)
8 Coronary Care ICU	99.85 (14.48) N=14	99.92 (16.92)	101.42 (12.70)	98.75 (15.46)
9 Surgical Oncology	100.62 (16.34) N=24	102.79 (16.10)	101.91 (16.46)	96.45 (13.69)
10 Complex Medicine	107.50 (6.55) N=12	107.41 (7.41)	106.91 (10.65)	103.00 (11.20)
11 Adult/ICU Step Down	99.22 (8.21) N=9	105.11 (7.55)	98.44 (7.35)	92.77 (15.92)
Mean (SD)	100.31 (13.26)			

Table 12. Means, standard deviations, and N's for the **Interpersonal** Composite score and the three core subscales that comprise the composite scale by unit. The EQI-2 is standardized to a mean of 100 and SD of 15. Scores below 90 are considered "low" and scores above 110 are considered "high."

Unit	Inter-personal Composite Scale	Core Subscales		
		Interpersonal Relationships	Empathy	Social Responsibility
1 Acute Care for the Elderly	103.86 (13.79) N=15	101.33 (17.51)	106.46 (12.17)	102.40 (11.08)
2 Transplant	107.84 (13.72) N=19	105.36 (15.25)	108.21 (12.19)	107.78 (12.61)
3 Short Stay	109.14 (15.00) N=7	108.42 (16.39)	107.14 (11.83)	110.28 (13.03)
4 Cardiac Telemetry	108.22 (9.95) N=6	103.00 (12.91)	104.83 (11.12)	98.66 (8.26)
5 Cardiovascular Telemetry	108.22 (9.95) N=9	103.77 (13.09)	111.22 (9.18)	106.22 (11.15)
6 Surgery Trauma	100.40 (11.73) N=15	99.46 (15.35)	102.40 (9.90)	99.73 (13.47)
7 Primary Care	103.75 (13.30) N=8	101.50 (17.08)	106.25 (10.19)	102.50 (14.33)
8 Coronary Care ICU	102.57 (9.59) N=14	104.14 (10.77)	101.21 (9.73)	102.28 (10.25)
9 Surgical Oncology	108.95 (13.15) N=24	107.45 (14.53)	111.25 (9.93)	104.33 (16.21)
10 Complex Medicine	109.66 (11.84) N=12	108.08 (15.76)	110.41 (10.15)	107.66 (11.74)
11 Adult/ICU Step Down	105.88 (11.16) N=9	103.11 (13.77)	106.88 (12.73)	105.77 (9.82)
Mean (SD)	105.91) (12.38)			

Table 13. Means, standard deviations, and N's for **Decision Making** Composite score and the three core subscales that comprise the composite scale by unit. The EQI-2 is standardized to a mean of 100 and SD of 15. Scores below 90 are considered "low" and scores above 110 are considered "high."

Unit	Decision Making Composite Scale	Core Subscales		
		Problem Solving	Reality Testing	Impulse Control
1 Acute Care for the Elderly	100.53 (17.64) N= 15	98.46 (15.69)	98.86 (17.15)	103.93 (14.56)
2 Transplant	104.15 (14.11) N=19	100.26 (12.15)	103.47 (13.52)	106.25 (12.28)
3 Short Stay	105.57 (13.30) N=7	102.00 (10.45)	105.28 (13.45)	106.14 (13.50)
4 Cardiac Telemetry	98.11 (14.73) N= 6	93.16 (18.01)	92.50 (14.58)	101.16 (21.46)
5 Cardiovascular Telemetry	98.11 (14.73) N=9	92.33 (21.55)	100.66 (12.98)	103.00 (12.91)
6 Surgery Trauma	99.20 (9.23) N=15	92.53 (16.47)	101.66 (7.77)	104.26 (10.38)
7 Primary Care	100.12 (19.85) N=8	94.75 (18.94)	100.12 (15.46)	104.62 (16.85)
8 Coronary Care ICU	100.21 (8.66) N=14	99.21 (11.63)	100.92 (6.47)	100.07 (10.88)
9 Surgical Oncology	104.91 (14.91) N=24	99.25 (16.21)	102.70 (14.00)	109.87 (12.11)
10 Complex Medicine	104.91 (9.97) N=12	100.58 (9.71)	105.25 (9.55)	106.16 (14.05)
11 Adult/ICU Step Down	95.66 (14.74) N=9	88.22 (20.71)	104.00 (11.59)	98.55 (11.14)
Mean (SD)	101.50 (14.04)			

Appendix B (continued)

Table 14. Means, standard deviations, and N's for the **Stress Management** Composite score and the three core subscales that comprise the composite scale by unit. The EQI-2 is standardized to a mean of 100 and SD of 15. Scores below 90 are considered "low" and scores above 110 are considered "high."

Unit	Stress Management Composite Scale	Core Subscales		
		Flexibility	Stress Tolerance	Optimism
1 Acute Care for the Elderly	102.06 (12.10) N=15	102.06 (11.19)	100.20 (12.85)	103.60 (13.32)
2 Transplant	99.26 (10.88) N=19	98.52 (14.34)	94.31 (9.79)	106.63 (11.51)
3 Short Stay	100.28 (11.95) N=	100.71 (14.20)	97.85 (10.91)	103.57 (10.11)
4 Cardiac Telemetry	94.22 (16.47) N=6	98.50 (16.64)	100.00 (12.58)	103.33 (9.24)
5 Cardiovascular Telemetry	94.22 (16.47) N=9	93.33 (19.49)	95.00 (15.37)	98.66 (14.55)
6 Surgery Trauma	92.73 (12.85) N=15	90.20 (11.97)	90.60 (16.92)	102.00 (9.21)
7 Primary Care	97.62 (14.17) N=8	94.37 (12.51)	98.50 (10.99)	102.50 (17.37)
8 Coronary Care ICU	97.00 (10.74) N=14	95.71 (15.13)	101.50 (8.54)	96.42 (13.31)
9 Surgical Oncology	102.29 (13.47) N=24	103.54 (13.56)	102.12 (11.98)	100.54 (13.58)
10 Complex Medicine	96.25 (14.10) N= 12	92.25 (15.89)	97.75 (11.23)	101.66 (16.23)
11 Adult/ICU Step Down	96.88 (14.60) N=9	97.88 (14.64)	94.33 (12.50)	100.66 (11.72)
Mean (SD)4	98.40 (12.93) N= 138			

Appendix C

Table 15

Table 15. Number of patients discharged with a diagnosis of heart failure over 14 months by unit and the percent of those patients subsequently readmitted within 30 days of discharge for any reason. For example, in March 2013, 4 patients were discharged with a diagnosis of heart failure and 3 patients or 75% of them were readmitted to this hospital within 30-days after discharge.

Time	*1 Acute Care for the Elderly*	*2 Transplant*	*3 Short Stay*	*4 Cardiac Telemetry*	*5 Cardio-vascular Telemetry*	*6 Surgery Trauma*	*7 Primary Care*	*8 Coronary Care ICU*	*9 Surgical Oncology*	*10 Complex Medicine*	*11 Adult ICU Step Down*
Mar 13	*n=4 .75*	*n=7 0*	*n=1 0*	*n=6 .17*	*n=8 .13*	*n=1 0*	*n=2 0*	*n=4 0*	-	-	-
April 13	*n=5 0*	*n=9 .11*	*n=1 0*	*n=5 .20*	*n=6 .17*	*n=1 1.0*	-	*n=6 0*	*n=1 0*	*n=1 0*	*n= 2 .50*
May 13	*n=9 .22*	*n=10 .20*	*n=2 0*	*n=4 .25*	*n=11 .09*	*n=7 0*	*n=3 0*	*n=8 0*	*n=2 0*	*n=1 1.0*	-
June 13	*n=9 .33*	*n=4 0*	*n=2 0*	*n=4 .25*	*n=7 0*	*n=1 0*	-	*n=7 0*	*n=3 0*	*n=1 0*	-
July 13	*n=3 .66*	*n=8 .13*	-	*n=2 0*	*n=4 .25*	*N=1 0*	*n=3 0*	*n=4 0*	*n=1 0*	*n=1 0*	-
Aug 13	*n=8 .25*	*n=12 0*	*n=2 0*	*n=3 0*	*n=6 .17*	*n=1 0*	*n=2 0*	*n=4 0*	*n=1 0*	-	-
Sept 13	*n=7 .14*	*n=11 0*	*n=3 0*	*n=7 .14*	*n=7 0*	*n=1 0*	*-n=1 0*	*n=3 0*	*n=1 0*	-	-
Oct 13	*n=3 0*	*n=6 0*	*n=1 0*	*n=11 .28*	*n=7 .09*	*n=1 0*	-	*n=6 0*	-	-	-

Appendix C. (continued)

Time	*1 Acute Care for the Elderly*	*2 Transplant*	*3 Short Stay*	*4 Cardiac Telemetry*	*5 Cardio-vascular Telemetry*	*6 Surgery Trauma*	*7 Primary Care*	*8 Coronary Care ICU*	*9 Surgical Oncology*	*10 Complex Medicine*	*11 Adult ICU Step Down*
Nov 13	*n=5 0*	*n=8 .12*	*n=2 0*	*n=5 0*	*n=2 .5*	*n=2 0*	*n=3 .33*	*n=4 0*	*-*	*n=1 0*	*n=2 0*
Dec 13	*n=7 .85*	*n=8 0*	*-*	*n=5 .2*	*n=2 .5*	*n=1 0*	*n=3 0*	*n=4 0*	*n=1 0*	*n=1 0*	*n=1 0*
Jan 14	*n=9 .22*	*n=4 .50*	*n=4 0*	*n=5 .2*	*n=6 .33*	*n=2 0*	*n=1 0*	*n=2 0*	*n=5 0*	*-*	*n=2 0*
Feb 14	*n=12 0*	*n=8 .13*	*n=2 0*	*n=4 .5*	*-*	*n=2 0*	*n=1 0*	*n=3 0*	*n=2 0*	*n=3 0*	*-*
Mar 14	*n=4 .50*	*n=6 .17*	*n=1 0*	*n=8 .13*	*n=4 .25*	*n=1 0*	*-*	*n=6 0*	*n=1 1.0*	*n=2 0*	*-*
April 14	*n=7 .14*	*n=10 0*	*n=2 0*	*(n=3) .33*	*n=2 1.0*	*n=1 0*	*n=2 0*	*-*	*N=1 1.0*	*-*	*n=1 0*
Mean % readmit	*.29*	*.10*	*0.0*	*0.18*	*.27*	*.07*	*.02*	*0.0*	*.14*	*.13*	*.10*

Appendix D

Table 16

Table 16. Mean ratings and number of patients completing the patient satisfaction item "How would you rate this hospital "by unit and month discharged. Ratings can range from 0 (worst possible hospital) to 10 (best possible hospital).

Unit											
Time	1	2	3	4	5	6	7	8	9	10	11
Mar 13	9.12 (1.98) N=25	9.17 (1.36) N=28	8.13 (2.53) N=15	9.11 (1.60) N=26	9.18 (1.24) N=27	8.75 (1.89) N=28	9.14 (1.40) N=14	6.66 (4.04) N=3	8.54 (2.30) N=31	9.07 (1.77) N=27	7.33 (2.51) N=3
April 13	8.94 (1.70) N=34	9.31 (1.28) N=29	9.07 (1.26) N=14	9.35 (1.19) N=31	8.86 (1.67) N=36	8.50 (2.12) N=26	9.33 (0.97) N=18	8.75 (2.5) N=4	8.68 (1.99) N=32	8.73 (1.96) N=38	9.66 (0.57) N=3
May 13	9.17 (1.24) N=17	9.55 (0.74) N=34	8.47 (2.19) N=34	9.30 (1.22) N=23	8.61 (1.49) N=31	8.57 (1.78) N=33	8.6 (2.27) N=10	8.5 (0.70) N=2	8.84 (2.10) N=39	8.58 (1.97) N=31	9.00 -- N=1
June 13	8.85 (1.61) N=35	8.96 (1.39) N=26	9.25 (1.66) N=28	9.08 (1.44) N=24	8.51 (2.50) N=39	8.47 (2.40) N=21	7.84 (3.4) N=13	9.14 (1.21) N=7	9.33 (1.14) N=27	9.05 (2.25) N=20	9.33 (1.15) N=3
July 13	9.04 (1.99) N=25	9.47 (0.74) N=21	9.05 (1.98) N=19	9.33 (0.98) N=36	8.31 (1.96) N=38	8.33 (2.29) N=24	9.57 (0.81) N=21	8.33 (2.87) N=6	8.90 (1.78) N=44	8.23 (3.0) N=26	9.00 (1.41) N=2
Aug 13	9.10 (2.04) N=30	9.42 (1.23) N=40	9.25 (1.45) N=32	8.66 (2.40) N=24	9.02 (2.06) N=36	8.64 (2.04) N=28	7.85 (3.62) N=7	9.28 (1.11) N=7	9.0 (1.91) N=43	9.0 (1.41) N=15	10.00 -- N=1

Appendix D (continued)

Unit											
Time	1	2	3	4	5	6	7	8	9	10	11
Sept 13	8.85 (2.21) N=27	8.72 (2.06) N=33	8.96 (1.70) N=31	9.23 (1.26) N=21	8.79 (2.10) N=34	8.43 (2.79) N=23	9.0 (1.0) N=15	9.57 (0.53) N=7	9.16 (2.19) N=31	9.45 (0.80) N=22	7.50 (3.53) N=2
Oct 13	9.25 (1.23) N=16	8.83 (2.17) N=18	9.0 (1.37) N=21	8.95 (2.03) N=21	8.90 (1.97) N=30	8.85 (2.03) N=14	8.10 (2.18) N=10	10.00 -- N=1	8.10 (2.26) N=28	7.45 (3.10) N=20	7.00 -- N=1
Nov 13	8.81 (1.52) N=27	9.80 (0.56) N=15	8.92 (1.87) N=26	8.52 (2.54) N=21	8.40 (1.80) N=27	8.82 (1.25) N=29	8.76 (2.04) N=13	9.00 (1.41) N=2	8.57 (2.33) N=33	8.73 (1.86) N=15	10.00 (0.0) N=2
Dec 13	8.39 (2.04) N=28	9.18 (1.65) N=22	8.68 (1.94) N=19	9.13 (1.45) N=22	8.55 (2.11) N=27	9.11 (1.40) N=18	8.66 (2.02) N=15	9.0 (1.41) N=2	8.56 (1.64) N=32	8.66 (1.44) N=15	7.33 (4.61) N=3
Jan 14	9.08 (1.34) N=24	9.02 (1.46) N=36	8.64 (2.01) N=25	9.06 (1.46) N=29	8.64 (1.77) N=25	9.00 (1.23) N=30	9.00 (1.41) N=14	8.50 (0.70) N=2	9.42 (0.90) N=19	9.00 (1.76) N=21	No cases
Feb 14	9.34 (0.93) N=23	8.85 (2.03) N=28	8.42 (2.33) N=26	8.33 (1.98) N=21	8.77 (1.19) N=22	8.44 (1.94) N=27	9.29 (1.35) N=17	10.00 (0.0) N=1	8.86 (1.54) N=23	7.86 (2.41) N=22	9.33 (1.15) N=3
Mar 14	8.63 (2.15) N=22	9.05 (2.13) N=17	8.60 (2.01) N=33	8.72 (1.60) N=22	8.75 (1.35) N=28	9.16 (0.92) N=18	8.57 (1.81) N=7	8.33 (2.87) N=6	9.03 (1.31) N=27	8.92 (1.26) N=14	7.00 (3.46) N=4
April 14	9.03 (1.25) N=27	9.50 (0.80) N=22	8.88 (1.45) N=17	8.20 (2.27) N=15	8.45 (1.88) N=35	8.77 (1.66) N=31	9.33 (0.97) N=15	10.00 -- N=1	8.41 (1.72) N=29	9.22 (1.41) N=22	9.25 (0.50) N=4
Mean N	8.95 N=360	9.19 N=369	8.81 N=340	8.98 N=336	8.69 N=435	8.69 N=350	8.91 N=189	8.84 N=51	8.80 N=438	8.70 N=308	8.53 N=32

Appendix E

Table 17

Table 17. Means, standard deviations and number of patients rating the quality of nurses' communication skills by unit and month discharged. This composite scale is made up of three items: Patients rated how often nurses (1) treated patients with curiosity and respect, (2) listened carefully, and (3) explained care clearly. Each of the three items were rated from 1 (never) to 4 (always).

	Unit										
Time	1	2	3	4	5	6	7	8	9	10	11
Mar 13	3.64 (0.50) N=26	3.60 (0.47) N=28	3.57 (0.48) N=15	3.77 (0.37) N=26	3.72 (0.50) N=39	3.64 (0.61) N=28	3.73 (0.35) N=14	3.00 (1.19) N=3	3.59 (0.72) N=32	3.69 (0.57) N=27	3.33 (0.33) N=3
April 13	3.78 (0.42) N=35	3.73 (0.51) N=29	3.73 (0.57) N=14	3.81 (0.34) N=32	3.68 (0.50) N=39	3.51 (0.67) N=26	3.88 (0.32) N=18	3.66 (0.66) N=4	3.58 (0.72) N=32	3.67 (0.59) N=38	3.55 (0.50) N=3
May 13	3.74 (0.35) N=18	3.82 (0.26) N=34	3.89 (0.29) N=35	3.62 (0.91) N=24	3.68 (0.40) N=31	3.65 (0.57) N=35	3.86 (0.23) N=10	3.16 (0.23) N=2	3.75 (0.47) N=40	3.65 (0.49) N=31	2.67 -- N=1
June 13	3.68 (0.41) N=36	3.70 (0.42) N=26	3.72 (0.59) N=29	3.74 (0.37) N=24	3.64 (0.48) N=39	3.58 (0.74) N=24	3.53 (0.88) N=13	3.90 (0.16) N=7	3.76 (0.41) N=27	3.73 (0.58) N=20	3.89 (0.19) N=3

Appendix E. (continued)

Time	Unit										
	1	2	3	4	5	6	7	8	9	10	11
July 13	3.81 (0.38) N=25	3.87 (0.33) N=22	3.91 (0.18) N=19	3.82 (0.27) N=36	3.59 (0.40) N=38	3.58 (0.74) N=24	3.86 (0.28) N=22	3.44 (0.75) N=6	3.64 (0.57) N=44	3.67 (0.56) N=27	3.66 (0.47) N=2
Aug 13	3.73 (0.59) N=31	3.81 (0.36) N=40	3.79 (0.47) N=32	3.62 (0.69) N=24	3.72 (0.46) N=36	3.66 (0.56) N=28	3.58 (0.68) N=8	3.71 (0.48) N=7	3.89 (0.24) N=43	3.66 (0.50) N=15	3.00 -- N=1
Sept 13	3.74 (0.50) N=29	3.60 (0.60) N=33	3.69 (0.54) N=31	3.79 (0.38) N=21	3.60 (0.55) N=35	3.59 (0.58) N=23	3.57 (0.44) N=15	3.80 (0.32) N=7	3.74 (0.55) N=32	3.81 (0.38) N=22	3.16 (1.18) N=2
Oct 13	3.74 (0.38) N=17	3.59 (0.55) N=18	3.71 (0.41) N=21	3.74 (0.50) N=22	3.71 (0.46) N=26	3.59 (0.54) N=14	3.39 (0.58) N=10	4..00 -- N=4	3.66 (0.60) N=28	3.25 (0.90) N=21	3.67 -- N=1
Nov 13	3.57 (0.50) N=28	3.79 (0.36) N=16	3.71 (0.58) N=26	3.76 (0.44) N=21	3.61 (0.46) N=27	3.65 (0.45) N=29	3.46 (0.79) N=13	4.00 (0.0) N=2	3.71 (0.47) N=33	3.70 (0.60) N=16	4.00 (0.0) N=2
Dec 13	3.63 (0.59) N=28	3.84 (0.33) N=22	3.54 (0.57) N=19	3.83 (0.28) N=22	3.71 (0.46) N=26	3.74 (0.56) N=18	3.81 (0.29) N=16	3.55 (0.50) N=3	3.61 (0.51) N=33	3.73 (0.38) N=15	3.22 (0.84) N=3
Jan 14	3.61 (0.67) N=26	3.69 (0.43) N=36	3.82 (0.34) N=25	3.62 (0.55) N=30	3.69 (0.42) N=25	3.65 (0.44) N=30	3.76 (0.40) N=14	3.50 (0.70) N=2	3.87 (0.19) N=19	3.76 (0.47) N=23	No cases
Feb 14	3.85 (0.26) N=23	3.73 (0.45) N=29	3.58 (0.55) N=27	3.62 (0.52) N=22	3.46 (0.65) N=22	3.72 (0.49) N=27	3.74 (0.41) N=17	4.00 -- N=1	3.69 (0.49) N=24	3.48 (0.64) N=22	3.67 (0.57) N=3

Appendix E. (continued)

Unit											
Time	1	2	3	4	5	6	7	8	9	10	11
Mar 14	3.72 (0.54) N=22	3.76 (0.36) N=17	3.53 (0.81) N=34	3.78 (0.40) N=22	3.75 (0.35) N=31	3.80 (0.29) N=20	3.58 (0.52) N=8	3.5 (0.69) N=6	3.77 (0.48) N=29	3.64 (0.53) N=16	3.83 (0.33) N=4
April 14	3.48 (0.77) N=29	3.66 (0.48) N=23	3.68 (0.46) N=18	3.35 (0.86) N=15	3.45 (0.61) N=35	3.52 (0.52) N=32	3.57 (0.57) N=15	3.67 -- N=1	3.58 (0.63) N=29	3.62 (0.86) N=24	3.91 (0.16) N=4
Mean N	3.69 N=373	3.73 N=373	3.70 N=345	3.72 N=341	3.64 N=444	3.63 N=356	3.69 N=193	3.63 N=52	3.70 N=445	3.65 N=317	3.61 N=32

Appendix F

Table 18

Table 18. Means, standard deviations and number of patients rating the item: *During this hospital stay, how often did the nurses treat you with courtesy and respect?*" by unit and month discharged. Ratings can range from 1 (never) to 4 (always).

	Unit										
Time	1	2	3	4	5	6	7	8	9	10	11
Mar 13	3.76 (0.57) N=26	3.82 (0.39) N=28	3.8 (0.41) N=15	3.88 (0.32) N=26	3.85 (0.35) N=28	3.78 (0.49) N=28	3.78 (0.57) N=14	3.33 (1.15) N=3	3.66 (0.66) N=30	3.81 (0.55) N=27	3.66 (0.57) N=3
April 13	3.88 (0.40) N=34	3.82 (0.46) N=29	3.85 (0.53) N=14	3.87 (0.56) N=31	3.74 (0.54) N=39	3.69 (0.67) N=26	3.83 (0.70) N=18	4.00 (0.0) N=4	3.68 (0.69) N=32	3.78 (0.57) N=38	3.66 (0.57) N=3
May 13	3.83 (0.51) N=18	3.91 (0.28) N=34	3.91 (0.28) N=35	3.91 (0.28) N=23	3.80 (0.40) N=31	3.80 (0.53) N=35	3.80 (0.42) N=10	4.00 (0.0) N=2	3.82 (0.50) N=39	3.77 (0.49) N=31	4.00 -- N=1
June 13	3.85 (0.42) N=35	3.73 (0.45) N=26	3.75 (0.63) N=29	3.86 (0.34) N=23	3.76 (0.48) N=39	3.45 (0.91) N=22	3.53 (0.77) N=13	4.00 (0.0) N=7	3.81 (0.48) N=27	3.75 (0.55) N=20	4.00 (0.0) N=3
July 13	3.88 (0.33) N=25	3.86 (0.46) N=22	4.00 (0.0) N=19	3.97 (0.16) N=36	3.76 (0.48) N=38	3.62 (0.76) N=24	3.95 (0.21) N=22	3.66 (0.81) N=6	3.77 (0.52) N=44	3.84 (0.79) N=26	4.00 (0.0) N=2
Aug 13	3.77 (0.66) N=31	3.87 (0.33) N=40	3.87 (0.42) N=32	3.70 (0.69) N=24	3.80 (0.47) N=35	3.77 (0.57) N=27	3.75 (0.70) N=8	3.85 (0.37) N=7	3.88 (0.39) N=43	3.80 (0.41) N=15	3.00 -- N=1
Sept 13	3.75 (0.63) N=29	3.75 (0.50) N=33	3.74 (0.51) N=31	3.80 (0.67) N=21	3.71 (0.45) N=35	3.73 (0.54) N=23	3.80 (0.41) N=15	3.85 (0.37) N=7	3.84 (0.51) N=32	3.95 (0.21) N=22	3.50 (0.70) N=2
Oct 13	3.88 (0.33) N=19	3.66 (0.59) N=18	3.71 (0.46) N=21	3.77 (0.52) N=22	3.68 (0.64) N=32	3.78 (0.42) N=14	3.50 (0.70) N=10	4.00 -- N=1	3.78 (0.49) N=28	3.42 (0.81) N=21	4.00 -- N=1

Appendix F. (continued)

Time	Unit										
	1	2	3	4	5	6	7	8	9	10	11
Nov 13	3.75 (0.51) N=28	3.93 (0.25) N=16	3.80 (0.56) N=26	3.90 (0.43) N=21	3.66 (0.48) N=27	3.68 (0.54) N=29	3.61 (0.65) N=13	4.00 (0.0) N=2	3.78 (0.48) N=33	3.75 (0.57) N=16	4.0 (0.00) N=2
Dec 13	3.75 (0.51) N=28	3.90 (0.29) N=22	3.73 (0.56) N=19	3.81 (0.66) N=22	3.84 (0.46) N=26	3.77 (0.54) N=18	4.00 (0.0) N=16	4.00 (0.0) N=3	3.75 (0.56) N=33	3.86 (0.35) N=15	3.30 (0.57) N=3
Jan 14	3.69 (0.67) N=26	3.77 (0.42) N=36	3.88 (0.33) N=25	3.70 (0.65) N=30	3.83 (0.38) N=24	3.83 (0.46) N=30	3.85 (0.36) N=14	3.50 (0.70) N=2	3.89 (0.31) N=19	3.86 (0.46) N=22	No Cases
Feb 14	3.95 (0.20) N=23	3.75 (0.51) N=29	3.70 (0.60) N=27	3.72 (0.55) N=22	3.59 (0.66) N=22	3.76 (0.51) N=26	3.88 (0.33) N=17	4.00 -- N=1	3.79 (0.41) N=24	3.54 (0.67) N=22	4.00 (0.0) N=3
Mar 14	3.85 (0.47) N=21	3.94 (0.24) N=17	3.75 (0.50) N=33	3.81 (0.39) N=22	3.90 (0.30) N=31	3.90 (0.44) N=20	3.75 (0.46) N=8	3.66 (0 51) N=6	3.82 (0.46) N=29	3.73 (0.45) N=15	4.0 (0.0) N=4
April 14	3.85 (0.35) N=28	3.69 (0.47) N=23	3.77 (0.42) N=18	3.53 (0.74) N=15	3.50 (0.66) N=34	3.78 (0.49) N=32	3.66 (0.61) N=15	4.00 -- N=1	3.75 (0.57) N=29	3.86 (0.34) N=23	4.00 (0.0) N=4
Mean N	3.81 N=369	3.81 N=373	3.80 N=344	3.81 N=338	3.74 N=441	3.74 N=354	3.78 N=193	3.82 N=52	3.79 N=442	3.77 N=313	3.81 N=32

Appendix G

Table 19

Table 19. Means, standard deviations, and number of patients completing the item "*During this hospital stay, how often did nurses listen carefully to you?*" by unit and month discharged. Ratings can range from 1 (never) to 4 (always).

	Unit										
Time	1	2	3	4	5	6	7	8	9	10	11
Mar 13	3.57 (0.57) N=26	3.57 (0.57) N=28	3.53 (0.63) N=15	3.80 (0.40) N=26	3.64 (0.55) N=28	3.62 (0.62) N=27	3.78 (0.42) N=14	3.00 (0.0) N=3	3.50 (0.80) N=32	3.66 (0.67) N=27	3.33 (0.57) N=3
April 13	3.76 (0.49) N=34	3.68 (0.60) N=29	3.71 (0.61) N=14	3.78 (0.42) N=32	3.69 (0.56) N=39	3.44 (0.76) N=25	3.94 (0.24) N=17	3.50 (1.0) N=4	3.50 (0.80)) N=32	3.52 (0.72) N=38	3.33 (0.57) N=3
May 13	3.72 (0.46) N=18	3.76 (0.43) N=34	3.80 (0.40) N=35	3.69 (0.70) N=23	3.58 (0.56) N=31	3.54 (0.70) N=35	3.90 (0.31) N=10	3.00 (0.0) N=3	3.72 (0.59) N=40	3.51 (0.56) N=31	2.00 -- N=1
June 13	3.66 (0.53) N=36	3.69 (0.47) N=26	3.75 (0.63) N=29	3.66 (0.48) N=24	3.53 (0.71) N=39	3.50 (0.85) N=22	3.53 (0.96) N=13	3.85 (0.37) N=7	3.70 (0.54) N=27	3.75 (0.63) N=20	4.00 (0.0) N=3
July 13	3.76 (0.52) N=25	3.86 (0.35) N=22	3.89 (0.31) N=19	3.77 (0.42) N=36	3.57 (0.50) N=38	3.54 (0.77) N=24	3.81 (0.39) N=22	3.50 (0.83) N=6	3.62 (0.61) N=43	3.62 (0.79) N=27	3.5 (0.70) N=2
Aug 13	3.74 (0.68) N=31	3.82 (0.38) N=40	3.75 (0.56) N=32	3.62 (0.71) N=24	3.66 (0.53) N=36	3.64 (0.67) N=28	3.62 (0.74) N=8	3.71 (0.48) N=7	3.93 (0.33) N=43	3.60 (0.63) N=15	3.00 -- N=1
Sept 13	3.75 (0.58) N=28	3.48 (0.75) N=33	3.62 (0.67) N=29	3.80 (0.40) N=21	3.51 (0.65) N=35	3.47 (0.73) N=23	3.40 (0.63) N=15	3.71 (0.48) N=7	3.71 (0.58) N=32	3.72 (0.55) N=22	3.00 (1.41) N=2

Appendix G (continued)

	Unit										
Time	1	2	3	4	5	6	7	8	9	10	11
Oct 13	3.76 (0.43) N=17	3.55 (0.70) N=18	3.71 (0.46) N=21	3.72 (0.55) N=22	3.50 (0.67) N=32	3.50 (0.65) N=14	3.3 (0.67) N=10	4.00 -- N=1	3.60 (0.68) N=28	3.23 (0.99) N=21	4.00 -- N=1
Nov 13	3.50 (0.57) N=28	3.75 (0.44) N=16	3.65 (0.62) N=26	3.71 (0.56) N=21	3.55 (0.57) N=27	3.58 (0.62) N=29	3.38 (0.86) N=13	4.00 (0.0) N=2	3.69 (0.52) N=33	3.68 (0.60) N=16	4.00 (0.0) N=2
Dec 13	3.60 (0.73) N=28	3.86 (0.35) N=22	3.47 (0.77) N=19	3.86 (0.35) N=22	3.65 (0.62) N=26	3.66 (0.68) N=18	3.80 (0.41) N=15	3.33 (1.15) N=3	3.62 (0.55) N=32	3.80 (0.41) N=15	3.0 (1.0) N=3
Jan 14	3.61 (0.69) N=26	3.63 (0.54) N=36	3.80 (0.50) N=25	3.65 (0.55) N=29	3.56 (0.58) N=25	3.60 (0.49) N=30	3.71 (0.46) N=14	3.5 (0.70) N=2	3.84 (0.37) N=19	3.68 (0.71) N=22	No Cases
Feb 14	3.73 (0.44) N=23	3.65 (0.55) N=29	3.48 (0.70) N=27	3.50 (0.59) N=22	3.45 (0.59) N=22	3.66 (0.62) N=27	3.64 (0.60) N=17	4.00 -- N=1	3.62 (0.64) N=24	3.45 (0.80) N=22	4.00 (0.0) N=3
Mar 14	3.63 (0.72) N=22	3.76 (0.56) N=17	3.51 (0.66) N=33	3.77 (0.42) N=22	3.70 (0.53) N=30	3.75 (0.44) N=20	3.37 (0.91) N=8	3.50 (0.83) N=6	3.75 (0.51) N=29	3.73 (0.45) N=15	3.75 (0.50) N=4
April 14	3.60 90.49) N=28	3.55 (0.58) N=23	3.61 (0.69) N=18	3.40 (0.82) N=15	3.40 (0.77) N=35	3.46 (0.32) N=32	3.53 (0.63) N=15	4.00 -- N=1	3.44 (0.73) N=29	3.78 (0.42) N=23	4.00 (0.0) N=4
Mean N	3.67 N=370	3.68 N=373	3.66 N=342	3.71 N=339	3.57 N=443	3.57 N=354	3.64 N=191	3.59 N=52	3.66 N=443	3.61 N=314	3.56 N=32

Appendix H

Table 20

Table 20. Means, standard deviations and number of patients completing the item "*During this hospital stay, how often did nurses explain things in a way you could understand?*" by unit and month. Ratings can range from 1 (never) to 4 (always).

	Unit										
Time	1	2	3	4	5	6	7	8	9	10	11
Mar 13	3.57 (0.70) N=26	3.42 (0.74) N=28	3.40 (0.63) N=15	3.61 (0.57) N=26	3.67 (0.47) N=28	3.60 (0.73) N=28	3.64 (0.63) N=14	2.66 (1.5) N=3	3.61 (0.84) N=31	3.59 (0.63) N=27	3.00 (1.0) N=3
April 13	3.68 (0.59) N=32	3.68 (0.60) N=29	3.64 (0.74) N=14	3.83 (0.37) N=31	3.61 (0.59) N=39	3.50 (0.76) N=26	3.88 (0.32) N=18	3.15 (1.0) N=4	3.56 (0.84) N=32	3.71 (0.65) N=38	3.66 (0.57) N=3
May 13	3.66 (0.48) N=18	3.78 (0.41) N=33	3.71 (0.51) N=35	3.73 (0.68) N=23	3.67 (0.47) N=31	3.62 (0.73) N=35	3.90 (0.31) N=10	2.50 (0.70) N=2	3.72 (0.55) N=40	3.67 (0.65) N=31	2.00 -- N=1
June 13	3.52 (0.55) N=36	3.68 (0.47) N=25	3.65 (0.66) N=29	3.70 (0.62) N=24	3.64 (0.74) N=39	3.58 (0.82) N=24	3.50 (0.96) N=13	3.85 (0.37) N=7	3.77 (0.50) N=27	3.70 (0.73) N=20	3.66 (0.57) N=3
July 13	3.80 (0.40) N=25	3.90 (0.29) N=22	3.84 (0.37) N=19	3.72 (0.51) N=36	3.44 (0.60) N=38	3.58 (0.82) N=24	3.81 (0.39) N=22	3.16 (0.75) N=6	3.53 (0.76) N=43	3.62 (0.68) N=27	3.50 (0.70) N=2
Aug 13	3.67 (0.65) N=31	3.75 (0.49) N=40	3.74 (0.57) N=31	3.54 (0.83) N=24	3.68 (0.58) N=35	3.60 (0.62) N=28	3.37 (0.74) N=8	3.57 (0.78) N=7	3.85 (0.35) N=42	3.60 (0.63) N=15	3.00 -- N=1
Sept 13	3.72 (0.70) N=29	3.57 (0.66) N=33	3.70 (0.58) N=31	3.75 (0.44) N=20	3.60 (0.65) N=35	3.56 (0.72) N=23	3.53 (0.63) N=15	3.85 (0.37) N=7	3.65 (0.74) N=32	3.77 (0.52) N=22	3.00 (1.41) N=2

Appendix H (continued)

	Unit										
Time	1	2	3	4	5	6	7	8	9	10	11
Oct 13	3.58 (0.61) N=17	3.55 (0.61) N=18	3.71 (0.56) N=21	3.72 (0.55) N=22	3.65 (0.60) N=32	3.50 (0.65) N=14	3.40 (0.69) N=10	4.00 N=1	3.60 (0.73) N=28	3.09 (1.04) N=21	3.00 -- N=1
Nov 13	3.46 (0.83) N=28	3.68 (0.60) N=16	3.69 (0.67) N=26	3.66 (0.57) N=21	3.62 (0.49) N=27	3.68 (0.54) N=29	3.38 (0.96) N=13	4.00 (0.0) N=2	3.66 (0.54) N=33	3.66 (0.72) N=15	4.0 (0.0) N=2
Dec 13	3.53 (0.63) N=28	3.77 (0.52) N=22	3.38 (0.69) N=18	3.81 (0.39) N=22	3.65 (0.48) N=26	3.77 (0.54) N=18	3.60 (0.63) N=15	3.3 (0.57) N=3	3.43 (0.66) N=32	3.53 (0.63) N=15	3.33 (1.15) N=3
Jan 14	3.53 (0.81) N=26	3.66 (0.58) N=36	3.8 (0.40) N=25	3.55 (0.78) N=29	3.70 (0.55) N=24	3.53 (0.62) N=30	3.71 (0.46) N=14	3.5 (0.70) N=2	3.89 (0.31) N=19	3.78 (0.42) N=23	No cases
Feb 14	3.86 (0.34) N=23	3.79 (0.49) N=29	3.53 (0.64) N=26	3.63 (0.58) N=22	3.36 (0.95) N=22	3.74 (0.59) N=27	3.70 (0.58) N=17	4.00 -- N=1	3.65 (0.57) N=23	3.45 (0.67) N=22	3.66 (0.57) N=3
Mar 14	3.72 (0.55) N=22	3.58 (0.61) N=17	3.65 (0.60) N=32	3.77 (0.52) N=22	3.67 (0.54) N=31	3.75 (0.44) N=20	3.62 (0.74) N=8	3.30 (0.81) N=6	3.72 (0.59) N=29	3.68 (0.60) N=16	3.75 (0.50) N=4
April 14	3.35 (0.62) N=28	3.73 (0.54) N=23	3.66 (0.48) N=18	3.13 (1.1) N=15	3.47 (0.61) N=34	3.31 (0.69) N=32	3.53 (0.63) N=15	3.00 -- N=1	3.55 (0.73) N=29	3.69 (0.55) N=23	3.75 (0.50) N=4
Mean N	3.61 N=369	3.69 N=371	3.66 N=340	3.67 N=337	3.60 N=441	3.58 N=356	3.64 N=192	3.48 N=52	3.65 N=440	3.62 N=315	3.46 N=32

Appendix I.

IRB Approval 5/27/2015 to 5/27/2016

USF
UNIVERSITY OF
SOUTH FLORIDA

RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX (813) 974-7091

4/30/2015

Mary Kutash, ARNP,
MSN Tampa General
Hospital
Acute Care Services POBox 1289
Tampa, FL 33601

RE: **Expedited Approval for Continuing Review**
IRB#: CR1_Pro00017288
Title: THE RELATIONSHIP BETWEEN NURSES' EMOTIONAL INTELLIGENCE AND PATIENT OUTCOMES

Study Approval Period: 5/27/2015 to 5/27/2016

Dear Ms. Kutash:

On 4/30/2015, the Institutional Review Board (IRB) reviewed and **APPROVED** the above application and all documents outlined below.

Approved
Item(s): Protocol
Document(s):
ProtocolNurses Emotional IntelligenceV4clean.docx

The IRB determined that your study qualified for expedited review based on federal expedited category number(s):

Appendix I (continued)

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB. Any changes to the approved research must be submitted to the IRB for review and approval by an amendment.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have
any questions regarding this matter, please call 813-974-

5638. Sincerely,

John Schinka, Ph.D., Chairperson
USF Institutional Review Board

Appendix J.

IRB Approval for 5/27/2014 to 5/27/2015

RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX (813) 974-7091

5/27/2014

Mary Kutash, ARNP,
MSN Tampa General
Hospital Acute Care
Services
PO Box 1289
Tampa, FL 33601

RE: **Expedited Approval for Initial Review**
IRB#: Pro00017288
Title: THE RELATIONSHIP BETWEEN NURSES' EMOTIONAL INTELLIGENCE AND PATIENT OUTCOMES

Study Approval Period: 5/27/2014 to 5/27/2015

Dear Ms. Kutash:

On 5/27/2014, the Institutional Review Board (IRB) reviewed and **APPROVED** the above application and all documents outlined below.

Approved
Item(s): Protocol
Document(s):
ProtocolNurses Emotional IntelligenceV2May21.docx

Appendix J (continued)

It was the determination of the IRB that your study qualified for expedited review which includes activities that (1) present no more than minimal risk to human subjects, and (2) involve only procedures listed in one or more of the categories outlined below. The IRB may review research through the expedited review procedure authorized by 45CFR46.110 and 21 CFR 56.110. The research proposed in this study is categorized under the following expedited review category:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Your study qualifies for a waiver of the requirements for the documentation of informed consent as outlined in the federal regulations at 45CFR46.117(c) which states that an IRB may waive the requirement for the investigator to obtain a signed consent form for some or all subjects if it finds either: (1) That the only record linking the subject and the research would be the consent document and the principal risk would be potential harm resulting from a breach of confidentiality. Each subject will be asked whether the subject wants documentation linking the subject with the research, and the subject's wishes will govern; or (2) That the research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research context.

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB. Any changes to the approved research must be submitted to the IRB for review and approval by an amendment.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have
any questions regarding this matter, please call 813-974-5638.

Sincerely,

Kristen Salomon, Ph.D., Vice Chairperson
USF Institutional Review Board

Appendix K

MHS Student Research Discount

Student Research Discount with MHS Products

Hello Mary,

Congratulations! You have been approved for a Student Research Discount on the EQ-1 2.0 for your study entitled 'The Relationship Netween Nurse's Emotional Intelligence and Patient Outcomes'. This discount grants you 30% off of related product orders over $50 (before shipping) as well as access to scored datasets for a fee of $6 per administration online. Please call client services at 1.800.456.3003 using the following customer number to place your order: 188577.

Conditions

1) Your discount expires one year from today. If you require a discount beyond the expiry date please re-apply at that point.

2) Please bear in mind that scored datasets are to be used for the collection of data only and cannot be used to provide feedback to. respondents. If you are intending to provide feedback please ensure that you order one of our available reports. Your 30% discount will apply to the report cost.

3) Your research is important to us, as agreed upon in your application please remember to send a report of your results to: researchsummaries@mhs.com following the completion of your study.

Thank you, and good luck with your research,

Shawna Ortiz, Customer Service Representative
MULTI-HEALTH SYSTEMS INC. (MHS)
In Canada: 1-800-268-6011 Address: 3770 Victoria Park Ave. Toronto, Ont. M2H 3M6
In U.S.: 1-800-456-3003 Address: P.O. Box 950 North Tonawanda, NY 14120-0950
International: 416-492-2627
Fax: 416-492-3343 Toll Free in Canada & U.S.: 1-888-540-4484
Website: www.mhs.com
Please send all US courier deliveries to 60 Industrial Parkway, Suite 706, Cheektowaga, NY, 14227 or our Canadian address.

Appendix L.

Demographic Survey

Demographic Survey

Study ID #

Have you discharged a patient with the diagnosis of Heart Failure within the past year? □ Yes □ No

Please indicate the unit that you work on.

□6C1 □8A □2H □5A2 □3H □7A2 □8C
□8 & 9 F □6A □7C □3K □4F □5C 1 & 2

Please provide the following information for descriptive purposes.

1. Ethnicity

□Hispanic or Latino □Non- Hispanic or Latino

2. Race

□American Indian/Alaskan Native □Asian

□Native Hawaiian / Pacific Island □Black or African American

□White

3. Marital status (choose one)

□Married □Separated □Divorced
□Widowed □Single (never married)

4. Number of hours worked per week_____

5. Work status

□ Part time (< 32 hours per week) □ Full time (≥ 32 hours per week)

6. Shift most frequently worked

□7AM-3PM □7AM-7PM □11PM-7AM
□3PM-11PM □7PM-7AM □Other (Specify)

7. Is English your native language?

□Yes □No

8. Number of years you have been working as an RN

Years_____, Months_____

9. Highest education level

□ Diploma (Nursing)

□ Associate's degree (Nursing)

□ Associate's degree (Non nursing)

□ Bachelor's degree (Nursing)

□ Bachelor's degree (Non nursing)

□ Graduate degree (Nursing)

□ Graduate Degree (Non nursing)

□ PhD

□ DNP

Appendix M

Permission to Administer Emotional Quotient Inventory

MHS
Multi-Health Systems Inc.
www.mhs.com
Publishers and Distributors of Professional Assessment Materials

July 17, 2015

To Whom it May Concern,

This letter is to confirm that Mary Kutash has been granted permission by Multi-Health Systems Inc, (MHS) to use the Emotional Quotient Inventory 2.0® (EQ-i 2.0) for her dissertation at the University Of South Florida College Of Nursing.

Mary has been granted permission to cite 6 items from the EQ-i 2.0 in her dissertation. Namely, these items are: I keep calm in difficult situations; I'm aware of how others feel; I make good use of my abilities; I understand how the emotions of others affect me; I handle stress without getting too nervous.

Mary has also met our Qualifications, which are in accordance with the ethical and professional standards of the American Psychological Association and the Standards for Education and Psychological Testing, to administer this instrument.

Thank you, Betty Mangos

Multi Health Systems, Inc.

MHS
In Canada: 3770 Victoria Park Ave., Toronto, ON M2H 3M6; (800) 268-6011 or 416-492-2627
In US: P.O. Box 950, North Tonawanda, NY 14120-0950; (800) 456-3003
International +1-416-492-2627
Fax +1-416-492-3343; Toll Free in Canada and the U.S. (888)540-4484
VISIT OUR WEBSITE AT http://www.mhs.com

Appendix N

Selected items from the EQ-i 2.0

- I keep calm in difficult situations.
- I'm aware of how others feel
- I make good use of my abilities.
- I understand how the emotions of others affect me.
- I am driven to achieve.
- I handle stress without getting nervous.