

The Relationship of Hospitalized Elders' Perceptions of Nurse Caring Behaviors, Type of  
Care Unit, Satisfaction with Nursing Care, and the Health Outcome of Functional Status

by

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A Dissertation submitted to the

Graduate School-Newark

Rutgers, The State University of New Jersey

in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

College of Nursing

Written under the direction of

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Newark, New Jersey

January, 2014

2014

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## ABSTRACT OF THE DISSERTATION

The Relationship of Hospitalized Elders' Perceptions of Nurse Caring Behaviors, Type of Care Unit, Satisfaction with Nursing Care, and the Health Outcome of Functional Status

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Elders use more hospital care, healthcare dollars, and are at the greatest risk for negative outcomes than any other age group. Researchers suggest that hospitalized elders are not always satisfied with nursing care and their health outcomes are poor. Nurses Improving Care for Health System Elders (NICHE) is an innovative care model that provides hospital nurses with best practices to improve elders' healthcare. Two sub-models under NICHE were tested in a hospital that subscribed to the NICHE model of care: the Geriatric Resource Nurse (GRN) whereby nurses' are knowledgeable to provide quality bedside nursing care to hospitalized elders; and the Acute Care Elder (ACE) unit, an environmental adaptation for elders that includes an interdisciplinary team focused on preventing geriatric syndromes. The purpose of the study was to investigate the relationships of hospitalized elders' perceptions of nurse caring behaviors, the type of care unit (ACE or Telemetry), satisfaction with nursing care, and the health outcome of functional status. Also tested was, if the type of care unit (ACE or Telemetry) moderated

the effect of elders' perceptions of nurse caring behaviors on satisfaction with nursing care; and if the type of care unit (ACE or Telemetry) moderated the effect of elders' perceptions of nurse caring behaviors on the health outcome of functional status. A non-experimental predictive correlational design was used to test the hypotheses. Elders' perceptions of nurse caring behavior were associated with and predicted their satisfaction with nursing care,  $r(178) = .555, p = .000$ , and overall, elders felt cared for and satisfied with the nursing care delivered. Older elders experienced significantly more functional decline, and those married or partnered experienced significantly less functional decline. There was significantly less functional decline (14.4%) than had been reported in earlier research (33%) in the total subject population. No association was found between nurse caring behaviors and the health outcome of functional status or satisfaction with nursing care between units. A two-hour orientation given to all new nurses on the topic of geriatric syndromes hospitalized may have confounded the lack of difference in units, but might have contributed to the overall perceptions of nurse caring, satisfaction and positive health outcomes.

## Acknowledgment and Dedication

I wish to thank my Dissertation Committee members: Dr. Jeanne Ruggiero, Dr. Lucille Eller, Dr. Zane Wolf, and special thanks to my Dissertation Chair, Dr. Claudia Beckmann. Without your guidance and your long arduous hours, I would not have gained this precious knowledge, nor would I have achieved my goal. I would also like to thank Dr. John Kolassa, who on a moment's notice, reviewed my statistics and assisted me with revisions. I will be forever grateful to all of you.

I dedicate this dissertation to my late sister-in-law Diane Melchiorre who taught me to care more, to my late parents Ralph and Anna Melchiorre whose experiences in the healthcare system inspired my curiosity to do this study, to my children, Lauren and Michael whose energy and love for life encourage me, and last of all, to my best friend and husband Ted who stands by me in my quest for knowledge and achievement.

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## Chapter 1

### The Problem

The proportion of individuals 65 and older is expected to increase during the time 2010 to 2030. This increase is the result of a worldwide decline in fertility, an increase in the average lifespan, and an increase in the number of people born two decades after World War II referred to as the “Baby Boomers.” By 2050, the average lifespan is expected to increase another 10 years (CDC, 2003).

As the number of elders increases, so will the demand for medical, nursing, and social services. Individuals who are 65 years and older use a significant portion of hospital care in the United States, and that number is increasing. Hospital discharges for persons 65 years and older comprised 20% of all hospital stays in 1970. In 2007, those 65 years and older comprised 37% of hospital discharges and 43% of hospital days; therefore elders 65 years and older comprised the largest number of hospital discharges. This is in contrast to 15 to 44 year olds who comprised 31% of hospital discharges, but only 24% of days of care. Children under age 15 years accounted for 6% of hospitalizations and 6% of days of care. Therefore, elders use more hospital care and have the highest average length of stay than any other age group (Hall, DeFrances, Williams, Golosinskiy, & Schwartzman, 2010).

Hospitalized elders are at a great risk for negative outcomes. They are vulnerable and have specialized needs because of the physical and physiologic changes that occur with aging (Ebersole, Hess, Touhy, & Jett, 2005; Friedrich, 2001; Gavan, 2003, Touhy & Jett, 2010). Chronic and acute illness superimposed upon elders can increase their frailty and compromise their ability to perform Activities of Daily Living (ADLs) therefore, they

require further assistance and specialized nursing care during hospitalization (Ebersole et al., 2005).

The anticipated increase in older persons who need hospitalization is a societal concern, as more U.S. dollars are spent on elders' healthcare than any other age group. The cost of providing healthcare for an older American is three to five times greater than the cost for someone younger than 65. By 2030, the Nation's health care spending is projected to increase by 25% due to demographic shifts, unless improving and preserving the health of older adults is more actively addressed (CDC, 2007). In addition, more healthcare dollars are spent on elders who are 85 years of age and older due to increased frailty and nursing home placement. Costs are projected to increase by 2050, as there will be more people in the oldest age group than ever before (Hartman, Catlin, Lassman, Cylus, & Heffler, 2007). Therefore, it is important that healthcare of elders results in care quality, positive health outcomes, optimal functional status, and care satisfaction. Care quality can be measured by patient satisfaction with care, health outcomes (Donabedian, 1980), and perceptions of nurse caring behaviors (Larson & Ferketich, 1993; Risser, 1975; Yellen, Davis, & Ricard, 2002).

### **Importance of Patient Satisfaction**

Patient satisfaction has been defined as a subjective, emotional, and personal response by a recipient of health care that what was expected, desired, needed, and wanted when seeking healthcare was in fact delivered and received (Linder-Pelz, 1982; Mahon, 1996; Mercouris, Ifantopoulos, Lanara, & Lemonidou, 1999; Pascoe, 1983; Risser, 1975). Patient satisfaction has several dimensions. It could be determined by the patient's judgment of improved health outcomes, healing and cure, the way in which interactions

with healthcare providers occurred, or the emotional tone of the care given (Donabedian, 1980; Ware, Davies-Avery, & Stewart, 1978). Theorists and researchers report that patient satisfaction with nursing care should be measured by patients' agreement that the nursing care given to them was what they expected, and nurses expressed that care with behaviors reflective of nurse caring (Larson & Ferketich, 1993; Risser, 1975; Yellen, Davis, & Ricard, 2002).

Some elders reported not being satisfied with the care they received when hospitalized. Turner, Lee, Gletcher, Hudson, and Barton (2001) used triangulation methods in a study of hospitalized elders on satisfaction with care. Elders reported that young nurses needed "age training." They reported that they did not get the care that they wanted or needed, nor did they get care that they felt was important to them from younger nurses. Elders expressed that younger nurses needed to understand the older person, be kinder, pay attention to elders' needs, and needed training to be sensitive to older people who could not care for themselves. Turner et al. concluded that elders were not satisfied with nursing care because nurses did not seem to understand how to care for them with their inherent frailties.

Ekman, Lundman, and Norberg (1999), using Ricoeur's phenomenologic hermeneutics, studied hospitalized elders who described their care as confusing, unknown, and unpredictable. Elders reported their hospital experience as being incomprehensible. They reported not being able to distinguish one caregiver from another and being talked about in the third person, with caregivers talking about them, not to them. Ekman et al. (1999) described this as liminality, which denotes a transition from one's normal position in society. It is a state in which one is reduced to a passive,

humble, and obedient state. While elders recognized the expertise of caregivers and felt confident in the help they were receiving to ease their medical symptoms, for the most part they did not understand what was happening and what was being said. Elders lost confidence and said that in the future, they would delay seeking medical care in a hospital setting. Ekman et al. (1999) posited that the outcome of delivery of nursing care that is inconsistent with elders' perceptions and beliefs about the nursing care that they want and need may lead to elders' dissatisfaction with nursing care and could be a predictor of their future use of healthcare. Researchers and theorists have linked patient satisfaction with utilization of health services and compliance with treatment (Donabedian, 1980; Mahon, 1996; Pascoe, 1984; Vuori 1991; Ware et al., 1978). It is possible that elders' disconnection from healthcare could result in missed opportunities for health promotion and illness prevention, increased morbidity, decreased function, and lead to poor health outcomes and increased health costs.

Researchers have shown that placement of elders on some elder care units might have a positive influence on their perceptions of nurse caring and thus enhance their satisfaction with nursing care. Elders perceive more effective nursing care and caring behaviors on units that are designated as elderly care units where nurses have specialized education in caring for the elderly (Chang et al., 2003; Turner et al., 2001), and in long-term care facilities where nurses have developed a long invested relationship with elderly patients (Smith & Sullivan, 1997). Chang et al. (2003) proposed that there were more satisfied elders on elder care units than on medical units.

### **Importance of the Health Outcome of Functional Status**

Donabedian (1980) defined health outcomes as the result or consequences of health

care delivery. Health outcomes are the changes that occur in the patient's health status after receiving health care. Donabedian noted that outcomes are the product of the dynamic interplay of health care structure and health care process. Measuring patients' health outcomes might provide information about the quality of health care structure and process, and thus, healthcare delivery.

Physical function is the ability to manage the everyday function of life such as eating, bathing, ambulating, managing money, and keeping track of medications. It is a process of interaction between a person and the environment and is influenced by motivation, physical and cognitive ability, illness, and support systems (Kresevic, 2008). Elders are at higher risk for negative health outcomes such as decline in functional status, because when an acute disease state is added to the structural and functional changes that occur with aging, elders can experience a loss of function, increased dependency, and complications that are unrelated to the original condition for which they are being treated (Covinsky, et al., 2003; Creditor, 1993; De Chesnay, 2005; King, 2006; Kirchheimer, 2009). This is of special concern because these negative outcomes can increase the complexity of care and lengthen care time, which in turn escalates health care costs (Arora, et al., 2007; Norris, et al., 2007).

Landefeld, Palmer, Kresevec, Fortinsky, and Kowal (1995) suggested that 20 to 40% of hospitalized elders demonstrated functional decline during hospitalization. Palmer, Counsell, and Landefeld (2003) explained functional decline as a conceptual model where there are "elements of hospitalization" that interact with the elder's clinical features that results in "dysfunctional syndrome" or decline. Decline in functional status can negatively affect independence and quality of life in elders and signal compromise of

safety. It is important to assess functional status in hospitalized elders to identify their need for assistance and intervention. Functional assessments of hospitalized elders yield important information about baseline functional capacity, the effects of illness on independence, rehabilitation needs, post-hospitalization needs, safety needs, and quality of care (Kresevic, 2008).

### **Importance of Cost Effective, Quality Care**

The Institute of Medicine (IOM, 2010) asserted that health care costs are straining the federal and private sector budgets. The current system of health care is not only cost prohibitive, but the variation of health outcomes does not justify the cost. Cost reduction might be achieved through the delivery of appropriate and effective care based on the application of evidence through scientific research findings. The IOM (2010) indicated that failure to apply evidence to care could result in care delivery that is not important; important care is not being delivered.

In addition to applying evidence-based practice to care, the IOM (2010) recommended better use of care providers such as advanced practice nurses, closer communication and collaboration among nurses, physicians, and other healthcare team members, and newer models of care that meet the individual needs of vulnerable populations.

The IOM (2001) recommended reorganizing the environment in which health care is delivered, with patient-centered care as the goal. The aim is to provide care that is respectful and responsive to an individual's personal needs and values, and these should guide clinical decision-making. Among the 10 principles or rules for redesign of the health system, the IOM (2001) contended that patient care should be based on continuous healing relationships, and patients should receive care whenever they need it and in as

many forms as possible. The IOM (2001) recommended that care should be customized to include patients' choices and preferences with the patient as the source of control; that decision making about care should be evidence-based, and needs anticipated, so that care is proactive, not reactive.

### **Innovative Models of Care Delivery**

Nurses Improving Care for Health System Elders (NICHE) is an innovative model of the hospital care environment that answers the IOM's charges for health care delivery. In this model of care, the acute care environment is restructured to meet the healthcare challenges of caring for acutely ill hospitalized elders so that their healthcare needs and individual needs are met. NICHE is a concept or model of care that provides hospitals and nurses with the principles, guidelines, and best practices to change the culture of healthcare delivery for elders and improve acute care of elders in the hospital environment. NICHE is an umbrella concept under which two care models are assumed: the Geriatric Resource Nurse (GRN) model and the Acute Care Elder (ACE) unit (NICHE Hartford Institute for Geriatric Nursing, 2011). These models emerged from evidence that suggested elders' needs were not being met and their health outcomes were poor. The GRN model is based on nurses' knowledge of how to care for elders; the ACE unit model is an environmental model that manipulates the physical environment and the process of health care delivery so that the health needs of acutely ill elders are met. Both models incorporate best practices and scientific evidence to improve health outcomes and care satisfaction of hospitalized elders. The NICHE model of care, with the incorporation of the GRN and the ACE unit model, is congruent with the IOM's charge of restructured healthcare environments. The NICHE model of care subscribes to a team approach to

care, the use of advanced practice nurses, healing relationships, care delivery that is based on scientific evidence and best practices, and care that is customized, respectful, and responsive to vulnerable populations, elders being among the vulnerable.

The GRN model is an educational and clinical intervention model within the NICHE concept that prepares a staff nurse as the clinical resource person on geriatric issues to other nurses on their unit. The goal of the GRN is to improve the geriatric knowledge and expertise of the bedside nurse and to provide high quality bedside nursing care to hospitalized elders by developing a corps of nurses throughout the hospital. These nurses are taught the theoretical and the clinical competencies to meet the needs of older adults, and serve as a consultant to other staff. The GRN is trained by a geriatric advanced practice nurse to identify and address specific geriatric syndromes such as falls and confusion, and to implement care strategies that discourage the use of restrictive devices and promote patient mobility. Nurses' perceptions of caring for the acutely ill older adults were significantly improved following implementation of the NICHE/GRN model (NICHE Hartford Institute for Geriatric Nursing, 2011).

The other initiative under the NICHE model of care, the ACE unit, is a systemized care unit that was formally developed to prevent functional decline in acutely ill hospitalized elders. Based on the original NICHE concept, the ACE unit designates a specific unit or a section of a unit to deliver interventions known to improve the clinical outcomes of older adult patients. The key components of an ACE unit include environmental adaptations for older patients, staff with special expertise in geriatrics, and an interdisciplinary team focused on preventing geriatric syndromes. The ACE unit consists of 10 to 20 beds and uses a team approach. The aim is to treat the whole person,



not simply the clinical condition. These hospital-based units are renovated to include carpeted floors, and a common area with a kitchen to which the elders have access. Elders are encouraged to get out of bed, dress, and ambulate, to keep them mobile and to prevent the loss of their normal routine. With this environment in place, elders can continue to function as though they were home for the purpose of preventing functional decline (NICHE Hartford Institute for Geriatric Nursing, 2011).

There is an interdisciplinary team on the ACE unit that oversees each patient. The team is comprised of a geriatric physician, an advanced practice geriatric nurse, a dietician, social worker, occupational, speech and physical therapists, pharmacist, geriatric psychiatrist, registered dietitian, case manager and social worker, wound care specialist, spiritual care provider, if requested, registered nurses, and nursing assistants (Cleveland Clinic Lakewood Hospital, 2008; Haugh, 2004). Cohen et al. (2002) posited that while care provided in geriatric units had no significant effects on survival, there were significant reductions in the degree of functional decline at discharge among patients assigned to geriatric inpatient units without an increase in total cost.

### **Caring Theory**

The NICHE concept of elder care, with the incorporation of GRN and ACE, has attributes that are consistent with caring theory. Leininger (1993) defined caring as behaviors that assist, support, or enable individuals to lessen a burden or illness, and is essential for well-being, health, healing, growth, survival, and facing handicaps or death. Patistea (1999) emphasized that caring is an essential human need. Leininger (1993) also represented caring as the “*essence*” of nursing.

The act of caring in nursing is a nurse's way of being that conveys a demeanor of interest and being present, and an attitude that the patient is important (Brilowski & Wendler, 2005; Swanson, 1999; Watson, 1979). Nurse caring consists of humanistic and altruistic feelings that accompany the delivery of care and is characterized by an intrapersonal relationship between the nurse and patient whereby the nurse's self-awareness and reverence for humanity is communicated to the patient. In this communication, the nurse determines what is important, needed, and desired by the patient so that healing and health can take place (Watson, 2008).

These attributes of nurse caring could be present within the GRN model and ACE unit and could be a significant factor contributing to patient satisfaction and positive health outcomes in hospitalized elders. Theorists and researchers posit that hospitalized individuals expect to receive physical, psychosocial, and emotional care primarily from nurses, and that the delivery of this care should accompany behaviors that express the attitude of nurse caring (Williams, 1997).

Caring theory proposes that caring is a conscious decision on the part of the nurse whereby the nurse enters into a relationship of healing and interpersonal connection with a patient. In this relationship the nurse is present and fully attentive to what the patient needs for health and comfort. Nurse caring behaviors could prevail in the GRN model and the ACE unit model. Nurses who choose to work with elders might demonstrate more caring behaviors. They might demonstrate more attention, compassion, and patience and develop an interpersonal relationship that could help them to identify the individual frailties of the elder, and apply the right interventions to enhance patient satisfaction and health outcomes. The IOM (2001) recommended that care should be

customized to include patients' choices and preferences, with the patient as the source of control.

Caring theorists have affirmed that knowledge is antecedent to nurse caring.

Knowledge of how to care, how to express caring behaviors, knowledge of the patient and the patient's individual preferences, and knowledge of the self are all important antecedents to caring (Crigger, 2001; Patistea, 1999; Swanson, 1991; Watson, 1979, 2008). The NICHE concept is theoretically supported by caring theory because NICHE proposes that nurses who have knowledge of caring for elders will focus their care around the inherent frailties of acutely ill elders and use best practices and scientific evidence when giving care so that outcomes will be positive. With knowledge of how to care for elders, GRNs could improve the quality of care that leads to patient satisfaction and positive health outcomes. Because of their focus on elder care, the GRN could give care that is moment focused, that is, as the elder expresses needs and shows vulnerabilities, the GRN listens, assesses, and gives care according to the elders preferences and choices.

A supportive environment is antecedent to caring (Watson, 1979). The concept of environment not only includes the physical layout, but a patterning and re-patterning of the nurse-patient field, whereby the nurse modifies the environment to assure safety, comfort, dignity, privacy, and a place for the patient's emotional release within the physical place. The nurse-patient field can create the environment that is integral for caring and healing (Watson, 2008). The healthcare environment should foster and deem important reverence in nurse-patient interpersonal relationships, ongoing assessment of a patient's needs, meeting needs for social interaction, safety, protection from physical harm and contagious microorganisms, autonomy, dignity, integrity and meeting comfort,

privacy, and advocacy needs (Brilowski & Wendler, 2005; Felgen, 2004; Jacelon, 2004; Lynn & McMillen, 1999; Naden & Eriksson, 2004; Watson, 1979, 2008).

Theorists and researchers suggest that patient satisfaction could be in jeopardy in the hospital environment where nurses have little time to demonstrate caring behaviors. The hospital environment frequently leaves nurses with no choice but to practice care that is hurried and skill- oriented, as opposed to nursing care that is accompanied with thoughtful and purposeful caring behaviors and the type of care that is needed and wanted by patients (Duffy & Hoskins, 2003; Larson & Ferketich, 1993; Watson, 1979, 2008). Caring relationships are not a priority in hospitals because the hospital care environment is organized on a technological, bio-medical model, which has as its objective the cure of disease, and focuses on tasks, technology, productivity, and is often understaffed. There is little time and less energy to focus on enhancing the care relationship between patients and nurses. Because nurses' time and energy is spent on care that is routine, complete assessment of patients' needs may not be accomplished, thus leaving nurses with incomplete information of what care is important to the patient, as well as care that is needed and desired. Therefore, the hospital care environment can have a negative impact on nurses' ability to deliver interpersonal quality care, and can have a negative impact on patient satisfaction (Duffy & Hoskins, 2003; Watson, 2008), and health outcomes (Landefeld et al., 1995).

The ACE unit is an environment that is sensitive to the needs and vulnerabilities of elders. Nurse caring behaviors can be fostered in the ACE model of care as opposed to the general medical unit because nurses who work on ACE units receive specialized education in caring for elders. Wallace, Greiner, Grossman, Lange, and Troth-Lippman

(2006) posited that a geriatric nurse education program could improve attitudes and increase knowledge of geriatric nursing care. The concept of caring for elders on an ACE unit lends itself to care that is sensitive to the needs of elders. ACE units are different from general hospital units. ACE units are organized to meet the needs and frailties of elders, and are focused on elder assessment and intervention and prevention of factors that can typically cause poor health outcomes and functional decline in elders after acute illness and hospitalization. Some studies have shown ACE units to produce better clinical health outcomes than units providing more traditional care. Bogardus, Richardson, Maciejewski, Gahbauer, and Inouye (2002) asserted that the quality of care that elders receive on ACE units could provide the necessary organizational structure to carefully evaluate the health needs of elders, and provide quality care and improved health outcomes. Landfeld et al. (1995) reported the better health outcomes when elders were cared for on ACE units rather than standard medical care units. These elders were less likely to be discharged to nursing homes. This translated into lower costs per patient.

The nurse caring behaviors that occur in an environment that is structured around the needs and frailties of elders could be a significant influence on patient satisfaction and positive health outcomes. Theorists and researchers proposed that nurse caring behaviors could result in a patient's perception of comfort, burden-relief, well-being, positive health outcomes, quality of life, and satisfaction (Duffy, 1992; Duffy & Hoskins, 2003; Leinniger, 1993; Patistea, 1999; Watson, 2008; Wolf et al., 1998). If elders perceive more comfort, burden relief, satisfaction, and have positive health outcomes when cared for under a NICHE model of care, then nurse caring and the attributes of caring could be responsible. Nurse caring in the NICHE model of care could be different than nurse

caring on general hospital units. Elders might perceive more nurse caring behaviors on NICHE units than in other areas of the hospital. As of yet, this has not been tested. Caring for elders in a controlled environment, specifically designed to cater to elders' vulnerabilities where nurses have the knowledge to care for them, might lead to better quality of care for elders (Bogardus et al., 2002). Quality of care could lead to patient satisfaction and positive health outcomes (Donabedian, 1980).

### **Importance of the Relationship between Models of Care and the Health Outcomes of Care Satisfaction and Functional Status**

The NICHE concept of care, with the inclusion of the GRN and the ACE unit may improve care quality for elders and contribute to the health outcome of functional status because it is structured around the developmental needs and frailties of acutely ill elders. (Hartford Institute for Geriatric Nursing, 2011). It includes the use of advanced practice nurses, a team approach to care with physician/nurse/healthcare team collaboration, and the use of evidence-based practice. These strategies can meet the goals of the IOM's imperative for patient-centered care and healthcare quality. The IOM suggests a restructuring of the healthcare environment to incorporate new and creative models of care in which vulnerable populations receive care based on choices and preferences to improve health outcomes. Employing a model of care where advanced practice nurses lead a team collaboration effort for the purpose of clinical decision making could provide care that is important and satisfying to elders, thus minimizing unimportant and unnecessary care which is of poor quality and prohibitive in cost. Better health outcomes can be achieved with care that is focused on what is needed and desired. Care delivery that is needed, wanted, and important can intercept the hospital-induced functional

decline that often impacts negatively on health outcomes. Employing such a model of care can lower healthcare costs, and improve health outcomes and healthcare quality.

However, we have little information about what aspects of nursing care or nurse caring behaviors might actually contribute to the health outcome of functional status and if the nurse caring behaviors perceived by elders are satisfying to them. Aharony and Strasser (1993) suggested the importance of studying patient satisfaction, specifically, the relationships between patient satisfaction and clinical outcomes, the behavioral outcomes of patient satisfaction and dissatisfaction, and the causal relationship of employee attitude on patient satisfaction. In this study, that translates to nurse caring behaviors on patient satisfaction. The extent and quality of nursing care and nurse caring behaviors as reported by patients can determine the degree of patient satisfaction (Larrabee et al., 2004). Mitchell, Ferketich, and Jennings (1998) asserted that further examination is needed related to the influences of teams/or models of care within the hospital system and its effect on patient outcomes, not just medical outcomes but the outcomes of nursing interventions, feeling cared for, and improved health and quality of life.

There is a paucity of literature related to hospitalized elders and their perceptions of nurse caring behaviors when cared for on an ACE unit as compared to being placed and cared for on a general medical unit. There is also a dearth of literature related to patient satisfaction and the health outcome of functional status when hospitalized elders are cared for on ACE units as compared with care on general medical units. Williams (1997) found that patients are more satisfied when they perceive nurses to be caring, and that sensitive caring and physical caring were the best predictors of patient satisfaction. These variables and the health outcome of functional status have not been tested in hospitalized

elders on ACE units compared with general medical units.

The purpose of this study was to investigate the relationships among hospitalized elders' perceptions of nurse caring behaviors, type of care unit, elders' satisfaction with nursing care, and the health outcome of functional status.

### Statement of the Problem

What are the relationships among hospitalized elders' perceptions of nurse caring behaviors, type of care\_unit, satisfaction with nursing care, and the health outcome of functional status? Does the type of care unit moderate the effect of hospitalized elders' perceptions of nurse caring behaviors on satisfaction with nursing care? Does the type of care unit moderate the effect of hospitalized elders' perceptions of nurse caring behaviors on the health outcome of functional status?

### Subproblems

1. Are hospitalized elders' perceptions of nurse caring behaviors positively related to their satisfaction with nursing care?
2. Are hospitalized elders' perceptions of nurse caring behaviors positively related to the health outcome of functional status?
3. Will hospitalized elders report more nurse caring behaviors on the ACE unit than hospitalized elders on the Telemetry unit?
4. Will hospitalized elders report more care satisfaction of the ACE unit than hospitalized elders on the Telemetry unit?
5. Will hospitalized elders who were cared for on the ACE unit have less functional status decline upon discharge than hospitalized elders who were cared for on the Telemetry unit?



6. Will type of care unit moderate the relationship of hospitalized elder's perceptions of nurse caring behaviors and their satisfaction with nursing care?
7. Will type of care unit moderate the relationship of hospitalized elders' perceptions of nurse caring behaviors and the health outcome of functional status?

### Definition of Terms

Patient satisfaction with nursing care is theoretically defined as the perception that the nursing care expected was the nursing care received (Risser, 1975). Patient satisfaction is operationally defined as the subject's score on the Patient Satisfaction Scale (PSS) (Kim, 1988).

Nurse caring behaviors are theoretically defined as transpersonal actions put forth by the nurse as the result of forming a professional relationship whereby the nurse communicates the value of humanity, is conscious of the unique nature of the patient, and remains fully present and reverent to the patient. Nurse caring behaviors are further defined as listening to what is important and what matters to the patient for the purpose of knowing the needs that are important to the patient, and to assist in the attainment of those needs (Swanson, 1999; Watson, 1979, 2008; Wolf et al., 1998; Wolf, Zuzelo, Goldberg, Crothers, & Jacobson, 2006). The perception of nurse caring behaviors is operationally defined as the subject's score on the Caring Behaviors Inventory-Elders (CBI-E) (Wolf et al., 2006).

Unit type is defined as a designated ACE model unit in a medical center where the NICHE model is in place, and another unit within the same medical center designated as a general medical unit. The ACE unit will be defined as the unit that is specifically designated as an elder care unit, where multidisciplinary rounds occur, and where the

nurses hold certification in Geriatric Nursing or are in the process of obtaining certification as a Geriatric Nurse. The general medical unit will be defined as a Telemetry unit within a hospital where there is a NICHE model in place, and elders are cared for by nurses who have no continuing education in care of elders beyond their nursing basic RN education and a general orientation within that institution.

Elders are defined as hospitalized individuals 70 years of age and older who are alert and oriented to person, place, and time, and who are admitted at any level of functional capacity.

Functional status is theoretically defined as a dynamic interaction between an individual and the environment (Krešević, 2008) manifested by the ability to manage day-to-day activities or activities of daily living (ADLs), such as bathing, dressing, toileting, walking, transferring from bed to chair, continence, and eating (Palmer et al., (2003). Functional status is operationally defined by whether the subject experienced decline or no decline. Decline or no decline is the difference between the subject's admission and discharge score on the Katz ADL Index (Katz, Ford, Moskowitz, Jackson, and Jaffee, 1963; Wallace & Shelkey, 2007).

#### Delimitations of the Study

Elders have varying degrees of acute and chronic illness, which may influence care needs and effect the health outcome of functional status (deChesnay, 2005; Touhy & Jett, 2010), therefore the following individuals will be excluded from the study. Patients who

- are on a ventilators, have acute aphasia, or acute CVA;
- experienced acute delirium during their hospitalization;
- are not able to see or hear;

- are disoriented.

### Significance of the Study

Hospitalization is often an inevitable option for elders obtaining healthcare (Kirchheimer, 2009), and can have a negative affect on elders' health outcomes (Covinsky, et al. 2003; Creditor, 1993) and satisfaction with nursing care (Ekman et al., 1999; Turner et al., 2001). Health and wellbeing of elders is often compromised at the expense of cure of disease (deChesnay, 2005). Theorists and researchers suggest that nurse caring can result in cure, health, well-being, healing, and care satisfaction (Duffy, 1992; Duffy & Hoskins, 2003; Watson, 2008; Wolf et al., 1998), and researchers have linked nurse caring, quality of nursing care, and patient satisfaction (Larrabee & Bolden, 2001; Oermann, 1999). Patient satisfaction is an important outcome of healthcare to study because it could be a factor that influences an individual's future return for health care (Mahon, 1996), especially among elders (Ekman et al., 1999). Elders' future use of healthcare can contribute to their maintenance of health and wellbeing.

Innovative models of the hospital care environment such as NICHE, GRN, and ACE units may alter the delivery of care so that care is attentive to meeting elders' needs. These models of care coincide and meet the IOM (2001) charge for reorganizing the care environment based on best practices and delivering quality health care. The NICHE model of care, specifically the ACE unit, can provide the specialized hospital environment that can yield more care satisfaction and improved health outcomes.

Research on quality improvement is important because it can help to illustrate existing problems in health care. The attainment of high quality health care is economically valuable, highly desired, but continues to be a persistent problem. The goal is to improve

the way healthcare is provided so that the “right care” can be provided every time. The right health care can reduce the cost of healthcare by an estimated 50% or \$1 trillion while improving patient health outcomes (IOM, 2007). Caring for elders in an environment that fosters nurse caring behaviors, interpersonal relationships, identification of individual needs, and the reduction of health risks can be the “right care” for elders. Eliciting the relationship of hospitalized elders’ perceptions of nurse caring behaviors and their satisfaction with nursing care can indicate the quality of care given since these have been empirically linked (Larabee et al., 2004).

The IOM (2010) explored the issues and concerns needed to facilitate the development of a health care system that delivers best practices, adds value with each clinical encounter, and adds seamlessly to the knowledge base for health improvement. Caring for elders in a specialized environment can answer the charge of the IOM (2010) for taking opportunities to redesign health delivery to vulnerable populations, prevent health deterioration, deliver efficient services, shorten length of stay, improve outcomes, and lower costs. Care of elders in a hospital that incorporates the NICHE model of care incorporates patient perspectives and needs, shared decision-making to facilitate patient engagement, understanding in an informed decision-making process, and the assurance that the personal preferences of patients will be reflected in the ultimate treatment choice. The NICHE model of care and caring for elders on ACE units might improve the efficiency with which care to elders is delivered since the members of the healthcare team have the knowledge and are alert to the special health care needs of the elder population.

The IOM (2010) proposes that interventions be adopted to reduce re-hospitalizations

for a range of conditions and disease management interventions for chronic conditions. Widespread adoption of effective programs for key chronic conditions could produce substantial national savings, perhaps as much as \$45 billion per year (IOM, 2010). Nurse caring behaviors that include individualized assessment of elders' health risks to prevent further deterioration of health in a chronically ill elder can prevent the downward spiral in health that contributes to poor health outcomes and re-hospitalization. Caring for elders in specialized elder care units can facilitate elders' preferences for care. Nurses who are specifically educated in care of elders and who work in a venue where caring behaviors are fostered can facilitate the kind of patient engagement and participation in decision making for better treatment and positive health outcomes. This "intensive elder care" wrought by an ACE unit could yield improved health outcomes by enhancing elders' functional status, independence, and their return to their pre-illness functional status, thus reducing the length of time they depend on institutionalized health care and reducing costs.

This study could contribute to the refinement of caring theory and care quality as it showed that nurse caring behaviors were related to and influenced elders' satisfaction with nursing care. Nurses who are educated at the start of their employment to care for elders might effect nurse caring behaviors that lead to elders' satisfaction with nursing care. The overarching NICHE model of care might lead to overall positive outcomes of higher perceived nurse caring, satisfaction with care, and the health outcome of functional status. Hospitals that become a venue for nurses to establish caring relationships with elder patients might have higher patient satisfaction scores reported by elder patients.

## Chapter 2

### Review of the Literature

This research will examine the relationships of hospitalized elders' perceptions of nurse caring behaviors, type of care unit, elders' satisfaction with nursing care, and the health outcome of functional status. Theoretical and empirical literature related to these relationships will be presented in this chapter. The first section presents theoretical literature concerning the dependent variable, patient satisfaction. The second section presents the theoretical and empirical literature concerning the dependent variable, health outcomes, followed by the third section, which presents the theoretical and empirical literature on functional status and functional decline in hospitalized elders. Section four presents the theoretical literature related to elders and the NICHE and ACE models of care for hospitalized elders, followed by the empirical literature of the relationship of models of care for hospitalized elders and positive health outcomes. The next section presents the theoretical literature concerning nurse caring and nurse caring behaviors, followed by the empirical literature concerning the relationship of nurse caring behaviors and satisfaction with nursing care; hospitalized elders' perceptions of nurse caring behaviors; the relationship of hospitalized elders' perceptions of nurse caring behaviors and satisfaction with nursing care; and finally, the relationship of hospitalized elder's perceptions of nurse caring, type of care unit, health outcomes, and satisfaction with nursing care.

### Introduction

The Institute of Medicine (IOM) (2008) has given the Committee on the Future Health Care Workforce for Older Americans the charge of determining the health care needs of

the rapidly growing and increasingly diverse population of Americans who are over 65 years of age. The current models of care delivery and the current mix of care providers are not producing the best outcomes for elders who use healthcare services.

Some aspects of elder care are being examined such as future health care services utilization, education of caregivers, and recruitment of the health care workforce for older Americans. New roles and new types of care providers for elders including informal caregivers could meet the care needs of the older population. New models of healthcare delivery and public programs might also accomplish these goals. New and innovative models of elder care could increase the efficiency by which the workforce is used in their care and could improve the quality of care delivery and elder health outcomes (IOM, 2008).

#### Theoretical Literature: Patient Satisfaction

The theory of patient satisfaction can be derived from the literature on good business practices and customer satisfaction. Customer satisfaction is at the core of good business practice. Customers are asked if the service they received is of the quality that they expected. It is from customer reports of their satisfaction that quality improvement models and practices can be derived. Orienting any service to the desires of the customer can be accomplished by listening to what the customer likes and finds desirable when a particular service is being delivered (Krowinski & Steiber, 1996).

Patient satisfaction is the subjective response of an individual to the healthcare received. It is based on perception. It is a response or judgment that the care that was needed, expected, and wanted was given and received (Linder-Pelz, 1982; Mahon, 1996; Mercouris et al., 1999; Pasco, 1983; Risser, 1975). Patient satisfaction is multifaceted in

that it could be the patient's judgment of not only improved health outcomes, cure and healing, but the way in which interactions with healthcare providers occurred, or the emotional tone of the care given (Donabedian, 1980; Ware et al, 1978).

Vuori (1991) posited that the patient's perceptions of the healthcare delivered, and satisfaction with care is important to the evaluation of quality of health care, and is the most important aspect in guiding patients' health behaviors. It can predict utilization and continued use of services (Ware et al., 1978). Utilization of health services and compliance with treatment increases with patient satisfaction (Donabedian, 1980; Mahon, 1996; Pascoe, 1984).

The practice of satisfying patients is complex because of the many facets of healthcare delivery. All aspects of the hospital environment can have an effect on patient satisfaction: the environment, the employees, insurance companies, government regulators, the cost of healthcare, health care providers, nurses, and ancillary staff. Staniszewska and Ahmed (1999) proposed that because patient expectations vary and depend on individual preferences, coming up with a single definition of patient satisfaction remains challenging. They reported that cardiac patients had different expectations of care than what was reported in previous literature on patient satisfaction. Also, patient satisfaction reports varied among age groups and gender (Linder-Pelz, 1982; Pascoe, 1984; Turner, et al., 2001; Ware, et al., 1978). Krowinski and Steiber (1996) suggested that the best measure of patient satisfaction with a service provider is to manage and measure the dynamics between the patient and the provider of care.

Donabedian (1980) asserted that patient satisfaction can be an indicator of the dynamics of structure, process, and outcomes of care and can be an outcome of quality



care. Patients' reports of satisfaction with care make them the authority of what is wanted and needed in the patient role. However, patients' lack of medical, technical, and nursing expertise might make their responses inaccurate when it comes to determining quality or the "right" care for them and the imposed healthcare issue. Donabedian (1980) clarified the concepts of quality and patient satisfaction by suggesting that quality care cannot be defined by patient satisfaction, but it can represent components of quality, that is, what the patient expects and values in the care received.

As patient satisfaction relates specifically to nursing, Risser (1975) was one of the first researchers to theorize, link, and test nurse caring to patient satisfaction. She defined patient satisfaction with nursing care as how closely a patient's expectations of desired nursing care matches the perception of the actual nursing care that is received (Risser, 1975). Patient satisfaction is an important indicator that the ideal nursing care expected by recipients was delivered (Risser, 1975). It can indicate that the patient experienced improved health outcomes and could also predict that quality care was delivered (Donabedian, 1980; Krowinski & Steiber, 1996; Mahon, 1996).

There is a link between patient satisfaction and care quality, and both of these are further linked to the care that nurses provide, such that patient satisfaction is most frequently referred to as an outcome of quality nursing care (Larrabee & Bolden, 2001; Oermann, 1999). Larrabee et al. (2004) asserted that the extent and quality of nursing care and nurse caring behaviors could determine the degree of patient satisfaction.

Schmele and Donabedian (1996) proposed that quality of care is determined by the "interpersonal exchange" that occurs between patient and health-care practitioners when technical care is delivered. Through this interpersonal exchange, a mutual trust occurs

which enables the patient to share necessary information, and the health care practitioner to select the necessary care. Watson (2008) described a similar concept that occurs between the patient and nurse as the “caring moment.” It is characterized by an intrapersonal relationship between the nurse and patient whereby the nurse’s self-awareness and reverence for humanity is communicated to the patient, and in this communication the nurse determines what is important, needed, and desired by the patient so that healing and health can take place. Theorists and researchers asserted that hospitalized individuals expect to receive physical, psychosocial, and emotional care primarily from nurses, and that the delivery of this care should accompany behaviors that express the attitude of nurse caring.

Larson and Ferketich (1993) recommended that outcomes of nursing care were best determined by assessing patient satisfaction with the caring they experience, not of the total health care experience. Therefore, it is important to focus on patients’ perceptions of their nursing care only, and not other aspects of hospital care. The essential dimensions of nurse caring must be part of the measurement of patient satisfaction if the goal is to measure the patient’s satisfaction with nursing care and nurse caring (Larson & Ferketich, 1993).

Risser (1975) identified four consistent concepts that influenced patient satisfaction with nursing care in the ambulatory care setting. These were: “the personalities of the nurses, the nurse-patient interpersonal relationship, the nurse’s professional competence, and patient’s perception of the quality of nursing care received” (p. 47). Yellen et al. (2002) identified four components that contribute to patient satisfaction with nursing care in the acute care setting. They are professionally competent care, an interpersonal

relationship with the nurse, availability of the nurse, and an interpersonal relationship with the nurse that involves humaneness.

Donabedian (1980) contended that it is the attributes of those providing the care and the setting and or system in which care is taking place by which patients judge the quality of care. The provision of technical care has to do with the application of the science and technology of care delivery. The interpersonal care is the relationship between the caregiver and the patient that conforms to socially and professionally defined values and norms. It is both technical and interpersonal proficiency that results in optimal patient welfare, patient satisfaction, and the ultimate outcome of quality care (Donabedian, 1980).

Theorists proposed that patients are satisfied when nurses demonstrate technical competence and proficiency, concern, open communication, information gathering and giving, and mutual goal-setting (Linder-Pelz, 1982; Mahon, 1996; Ware et al., 1978). Bond and Thomas (1992) indicated that patients are satisfied when they are given the opportunity to express their feelings to the nurse, including complaints and their dissatisfaction with their immediate condition. Patients' complaints and the response given by the nurse may be indicative of a less oppressive health care environment rather than the worsening of care (Bond & Thomas, 1992).

Patients are satisfied when they have access to care, and that care is continuous, convenient, and affordable. A physically comfortable environment is deemed satisfying, as is care that produces positive outcomes and is efficient (Linder-Pelz, 1982; Mahon, 1996; Ware et al., 1978).

In addition to feeling satisfied, the consequences of patient satisfaction are better

patient compliance, better clinical outcomes, loyalty, return business, referrals, and increased revenue and fewer malpractice suits. When individuals are dissatisfied, they are non compliant with the therapeutic regimen and withdraw from health care (Krowinski & Steiber, 1996; Mahon, 1996).

In summary, patient satisfaction is a means of evaluating if the care received by patients is what they need and desire. Patient satisfaction is linked more closely to nursing behaviors than any other aspect of care received in the healthcare setting. The nurse caring behaviors of delivery of technical care and interpersonal care, that is, attending to psychosocial and emotional needs of patients are the two broad factors on which patient satisfaction is measured (Larrabee & Bolden, 2001; Larson & Ferketich, 1993; Mahon, 1996; Risser, 1975; Williams, 1997; Yellen et al., 2002). Patient satisfaction with nursing care can improve health outcomes by increasing compliance to the therapeutic regimen and increase healthcare utilization. Patient satisfaction can be an outcome of nurse caring behaviors.

#### Theoretical and Empirical Literature: Health Outcomes

Donabedian (1980) defined health outcomes as the result or consequence of health care delivery. Health outcomes are the changes that occur in the patient's health status after receiving health care. Donabedian (1980) proposed that outcomes are the product of the dynamic interplay of health care structure and health care process; care quality can be determined by examining the relationship among structure, process, and outcomes. Donabedian (1980) also purported that outcomes can be divided into health outcomes, i.e., mortality, morbidity, disability, longevity, and complications of, or failure of, therapies and patient satisfaction.

Donabedian (1980) explained the meaning and relationship of structure, process, and outcomes, and noted that health care structure relates to the tools and resources at hand, and the system of health care delivery that the providers of care have available to them. Process refers to the many facets of the interpersonal dynamics between providers and patients. Structure and process, and the interplay of both, become antecedents to health outcomes. Uncovering antecedents to positive health outcomes is challenging because the system, the client, and the nursing interventions are multifaceted and are in constant dynamic flow with each other. Teams/or models of care within the system may effect patient outcomes, not just medical outcomes, but outcomes of nursing interventions that effect patients' functional status, feeling cared for, and improved health.

Mitchell et al. (1998) related that there is a reciprocal relationship between the concepts of health care *system*, the *process*, and health care *outcomes*. The concepts of structure, process, and outcomes, and the interplay of their relationships, should be tested since previous research of linear relationships between structure or process variables show a consistent relationship to patient outcomes such as adverse effects and mortality when structure and process are examined alone. Al-Assaf (1996) asserted that examining outcomes can be used to improve the structure and process of healthcare. The issues that impact outcomes and make up the structure and process need to be addressed. These issues that comprise some of the structure and process of care include interpersonal communication, care standards, customers, and delivery systems. Managing outcomes through these four issues could improve care quality.

In their meta-analysis, Street and Epstein (2008) linked clinician-patient communication as a significant influence in producing a change in health behaviors, and

thus affecting health outcomes. Watson (2008) suggested that quality relationships in which the caregiver is humane, aware of the other, present, demonstrates genuine listening and hears the other, and can translate sensitivity into the delivery of care can contribute to healing outcomes.

In a study to determine the effectiveness of a nurse's caring relationship according to Watson's Caring Model on the blood pressure and quality of individual's lives, Erci et al. (2003) found statistically significant differences between mean scores of general-being ( $t = 3.097$ ,  $df = 51$ ,  $p = 0.003$ ), physical symptoms and activity ( $t = 2.994$ ,  $df = 51$ ,  $p = 0.004$ ), medical interaction ( $t = 2.127$ ,  $df = 51$ ,  $p = 0.035$ ); and also significant differences between blood pressure (systolic:  $t = 4.830$ ,  $df = 51$ ,  $p = 0.000$ ; and diastolic:  $t = 3.51$ ,  $df = 51$ ,  $p = 0.001$ ). They used a one-group pretest and post-test design when nurse researchers were prepared in the use of Watson's Theory and Model of Caring and the 10 Carative Factors. After 52 patients with hypertension were accepted into the study, patients completed an instrument consisting on demographic characteristics. In this study, blood pressure values were measured and a quality of life scale was administered. Using the process of Caring Theory, the nurse researchers visited the patients and their families once a week for 3 months. At the end of care, the quality of life scale was applied and blood pressures were recorded as the post-test measures. This study demonstrated that nurse caring according to Watson's Caring Model had a positive effect on health outcomes.

The ultimate goal of assessing outcomes in health care is to identify the impact that care has on patients, and to ultimately improve patients' functional status and quality of life. Other important reasons for assessing health outcomes are to use health outcomes as

information for marketing clinician performance, quality accountability, and building a knowledge base of evidence-based practice (Kane, 2006).

Meyers (1996) posited that the impact and utility of programs and intervention effectiveness can be evaluated by studying the impact or change that was effected by the program or intervention. Kane (2006) suggested that one way to do this is by examining clinical measures, patient self-reported experiences, patient survival, patients' functional status, affect, and patient satisfaction.

In summary, the dynamic interplay of healthcare structure, process, and outcomes has an effect on healthcare quality. Measuring outcomes can be used to improve healthcare structure and process. The interpersonal relationship between the patient and caregiver can affect care quality and outcomes. Positive health outcomes are important for improved quality of life.

#### Theoretical and Empirical Literature: Functional Status and Functional Decline in Hospitalized Elders

Function is the ability to manage day-to-day activities or activities of daily living (ADLs), such as bathing, dressing, toileting, walking, transferring from bed to chair, continence, and eating. Instrumental Activities of Daily Living (IADLs) are more complex activities such as maintaining independence in handling finances, taking medication, using public transportation, shopping, performing household chores, cooking, and using the telephone. Functional status is often measured in relation to ADLs (Palmer et al., 2003). Kresevic (2008) defined physical functioning as a “dynamic process of interaction between individuals and their environments. The process is influenced by motivation, physical capacity, illness, cognitive ability, and the external

environment including social supports” (p. 23).

Hospitalized elders are at greater risk for negative health outcomes than any other age group. When an acute disease state is added to the structural and functional changes that occur with aging, elders can experience a loss of function, dependency, and complications that are unrelated to the original condition for which they are being treated (De Chesnay, 2005; King, 2006; Kirchheimer, 2009). This is of special concern because elders are the most complex patients in that their care and treatment requires more time and more medical dollars (Arora et al., 2007; Norris et al., 2008).

Landefeld et al. (1995) posited that 20 to 40% of hospitalized elders demonstrate functional decline during hospitalization. Palmer et al. (2003) explained functional decline as a conceptual model where there are “elements of hospitalization” that interact with the clinical features of the elder that result in “dysfunctional syndrome” or decline. Decline in functional status can negatively affect independence, quality of life in elders, and signal compromise of safety. It is important to assess functional status in hospitalized elders to identify their need for assistance and intervention. Functional assessments of hospitalized elders yield important information about baseline functional capacity, the effects of illness on independence, rehabilitation needs, post-hospitalization needs, safety needs, and quality of care (Kresevic, 2008).

Boyd et al. (2008) compared functional outcomes of elders in the year after hospital discharge following acute medical illness who had acquired a new disability in ADLs at discharge compared with their preadmission baseline 2 weeks prior to admission, with elders who were discharged with their preadmission baseline of ADL function 1 year after discharge. Elders were classified into two main groups (Group 1) and (Group 2)



with two trajectories in each group. The two trajectories in Group 1 included elders whose self-care ADL function was at their baseline function. Baseline was defined as their ADL function two weeks prior to hospitalization. The first trajectory in Group 1 included elders who had maintained their baseline function (Group 1 Trajectory a). The second trajectory of Group 1 included elders who declined between baseline and hospital admission but recovered to baseline by the time of hospital discharge (Group 1 Trajectory b). The next group (Group 2) included elders who declined in self-care ADL function between baseline and discharge. This means they had acquired dependence in more ADLs and did not recover to baseline ADLs by the time of discharge (Group 2 Trajectory c). The second trajectory of Group 2 included elders who did not decline between baseline and admission but declined between admission and discharge (Group 2 Trajectory d). By 12 months after discharge, elders who were discharged with new or additional ADL disability, 41.3% died, 28.6% were alive but had not recovered to baseline function, and 30.1% were at baseline function. Of those discharged at baseline function, 17.8% died, 15.2% were alive but worse than baseline function, and 67% remained at their baseline function ( $p < .001$ ). The results of the study implied that hospitalized elders who were discharged with new or additional ADL disability were at higher risk for mortality and morbidity, may have higher care needs when hospitalized, and may need more care services upon discharge and thereafter. New or additional reductions in ADLs and self-care might have implications for elders' ability to live at home and for home care services (Boyd et al., 2008).

Recent models of care for hospitalized elders claim to “unburden the risk” for further functional decline and frailty that occurs during hospitalization because they are designed

with an integration of age-appropriate assessments and interventions, a team approach to care with enhanced communication, geriatric expertise, and the theoretical knowledge of caring for the ill elder (Hickman, Newton, Halcomb, Chang, & Davidson, 2007).

However, recent theorists and researchers contend that there is inconsistency and variation in how health care is delivered to acutely ill elders, and health outcomes of elders following hospitalization are not improving (Boyd, et al., 2008).

Evaluating functional status after hospitalization can be used as a measure of health outcomes. When evaluating function, it is important to distinguish whether it is the ability to perform activities, or the actual performance of activities that is being measured. In addition, it is important to assess what aspect of function is being evaluated, as well as how function is being evaluated, subjectively or objectively (Fawcett & Tulman, 1996).

In summary, functional ability is an indicator of health in elders. Functional decline can occur secondary to acute illness and hospitalization. Nearly one-third of acutely ill hospitalized elders experienced functional decline (Covinsky et al., 2003; Landefeld et al., 1995; Sager & Rudberg, 1998). There are models of care that can prevent functional decline in acutely ill hospitalized elders and improve health outcomes.

#### Theoretical Literature: Models of Care for Hospitalized Acutely Ill Elders

Researchers and clinicians describe models of care for hospitalized elders aimed at maintaining functional status and improving health outcomes following acute illness (Foreman et al., 1994; Lee & Fletcher, 2002). NICHE is a concept of care for acutely ill elders initiated by Dr. Terry Fulmer, former Dean of the New York University College of Nursing in 1981, with funds provided by the John A Hartford Foundation. The goal of NICHE is to change the care given to elders who are hospitalized. The vision and mission

of NICHE is the delivery of sensitive and the highest quality of care to all hospitalized patients 65 years of age and older, and to provide to healthcare facilities the principles and tools to change the way elders are cared for in hospitals. NICHE provides materials, interventional programs, protocols, and services to support the planning and implementation process of acute elder care. It is solely under the control of nursing practice in the areas where interventions affect elder care in a positive way (NICHE Hartford Institute for Geriatric Nursing, 2011).

NICHE began as a model of elder care called the Geriatric Resource Nurse (GRN) and continues to be one model of elder care within the NICHE model of care. The GRN is a staff nurse who is knowledgeable about geriatrics and how to care for elders, and serves as a resource for other staff nurses throughout the hospital and on elder care units. The GRN provides consultation to staff nurses about geriatric clinical syndromes such as sleep problems, problems with eating and feeding, incontinence, confusion, evidence of falls, and skin breakdown. Best practices and appropriate evidence-based interventions are implemented to provide institution-wide continuity of care for elders (Fulmer, 2001). The goal of the GRN model is the improvement of elder care with the implementation of standard protocols, solving geriatric problems, and enhancing the expertise of staff nurses. An advisory board of geriatric nurse experts of NICHE contributes to protocols that guide practice and management of the four conditions that lead to functional decline and other complications in elders: pressure ulcers, incontinence, sleep disorders, and the use of physical restraints (NICHE Hartford Institute for Geriatric Nursing, 2011).

The Geriatric Institutional Assessment Profile (GIAP) is an instrument that evolved from these protocols and is designed to help hospitals analyze the needs of elderly

patients and assess the gaps in elder care. It was developed to assess staff perceptions of their institution's adequacy and ability to care for elders and serve their health needs (NICHE Hartford Institute for Geriatric Nursing, 2011).

NICHE tools and processes were field tested at the following institutions: The University of Virginia, Charlottesville, Virginia, North Iowa Mercy Health Center, Mason City, Iowa, University of California, Davis Medical Center Sacramento, California, and Methodist Hospital of Indiana, Inc. Indianapolis, Indiana; and later, Bassett Health Care, Baystate Medical Center, Charleston Area Medical Center, Barnes Jewish-Christian Health System, and New Rochelle Hospital Medical Center. The evaluation of NICHE activities from these sites showed improvements when NICHE was implemented in the areas of staff perception of geriatric care, quality assurance, risk management, and human resource allocation data. In addition, this evaluation examined the processes by which these sites were able to achieve these outcomes, the characteristics and elements of strategies across sites that fostered success, and the barriers that affected NICHE implementation. The NICHE Tool Kit was the result of the findings from field tests. It consisted of the NICHE Planning and Implementation Guide and the effective nursing care models which included a variety of nursing approaches to care implemented and tested around the country that can reorganize nursing care to more efficiently and effectively meet the special needs of acutely ill elders. The effective nursing care models included the

- GRN model and the ACE models;
- action plan worksheets to help key staff devise a plan for improving geriatric care based on gaps identified through assessment;

- revised GIAP; and
- expanded clinical practice protocols that reflect the standards of nursing practice on 13 important geriatric syndromes (NICHE Hartford Institute for Geriatric Nursing, 2011).

From 1996 to 2002 NICHE expanded the toolkit and resources to include

- annual conferences including a leadership workshop for new sites adopting NICHE;
- clinical practice protocols;
- a curriculum guide for the continuing education of nurses related to best practices in elder care;
- sample course outlines for continuing education within hospitals that adopt the NICHE models and protocols;
- geriatric nurse competencies by which knowledge of geriatric care can be evaluated;
- a Gerontological Nursing Certification Review Course; and
- a national listserv where NICHE sites can share input, resources, and information about care of elders (NICHE Hartford Institute for Geriatric Nursing, 2011).

#### Theoretical Literature: The Acute Care for Elders (ACE) Unit Model of Care

The acute care for elders (ACE) model was developed as a specialty unit within the hospital environment. The goal of the ACE unit was to prevent functional decline in acutely ill hospitalized elders by interfering with the adverse effects of hospitalization on elders (Palmer et al., 2003). It was initiated at University Hospitals of Cleveland in conjunction with the Frances Payne Bolton School of Nursing at Case Western Reserve

University, and was funded by a grant from the Hartford Foundation based in New York. The ACE model for care of hospitalized elders was studied by NICHE as a model for hospitals to implement to improve nursing care of geriatric patients (Foreman et al., 1994). The ACE unit is designed with attention to the physical environment, collaborative team building, and development of nurse-initiated clinical protocols of care.

The environment of the ACE unit was adapted to enhance elders' function. There was a communal dining area, activity area, art and music therapy, recliners, and low beds. The environment of the unit was a modification of the usual hospital environment. The objective of this specialized environment was to encourage elders' ambulation and independence. Carpeting was installed in the rooms and hallways. Handrails were placed along the walls and grab bars in the bathrooms. To maintain elder orientation and self-care, the rooms had large clocks and calendars. Bathrooms doors had easy to use levers instead of doorknobs, and toilet seats were elevated. There was a common space where patients could leave their rooms and socialize during meals and activities (Palmer et al., 2003).

Collaborative team-building was led by a geriatric medical director and a geriatric clinical nurse specialist (Fulmer et al., 2002). The model was a design for evaluating and intervening on the multiple clinical problems of acutely ill elders (Foreman et al., 1994). A geographically defined area of the hospital was determined for ease of interdisciplinary collaboration. Specific roles were assigned to the dietician, social worker, physical therapist, and home care nurse. Nursing staff was oriented to the guidelines of the unit. The CNS educated nurses were assigned to care for elders and recognize and intervene on geriatric syndromes to prevent functional decline.

Clinical guidelines enabled primary nurses to assess elders' ADLs, neurocognitive, and psychosocial function (Fulmer et al., 2002). Changes were recorded. Interdisciplinary team members met each morning to review assessments and make recommendations to nurses and medical residents. Over time, the primary nurses' roles were expanded to that of geriatric resource nurses. A medical director, who was a specialist in geriatric medicine, developed guidelines for care in collaboration with other experts and consultants in the hospital. Guidelines for ordering psychoactive drugs, the use of restraints and alternatives, prevention of dehydration and malnutrition, as well as a manual for medical care were kept on the unit. Interdisciplinary rounds by the social worker and the physical and occupational therapist consisted of reviewing the patient's active problems, the therapeutic goals and the anticipated hospital length of stay, and focused on transitional care from hospital to home. The term "functional trajectory" was used to drive the process of determining the patient's functional status at discharge, transition to home on leaving the hospital, and home care requirements. The current functional status (performance of ADLs, mobility, cognition, affect, and nutritional state) was compared to the patient's baseline functional status prior to illness and hospitalization (Palmer et al., 2003). The ACE unit changes the culture of how medical and nursing care are delivered when compared with care given on a typical medical surgical unit of the hospital.

In summary, the ACE model of care can control the elements of hospitalization by providing interdisciplinary geriatric assessment, an environment adapted for the developmental changes in the older person, patient-centered medical care and nursing care, and planning for return to home. Improved functional status, lower risk of nursing

home placement, and higher levels of patient satisfaction can be achieved in the ACE model.

Empirical Literature: Relationship of Models of Care for Hospitalized Elders and Positive Health Outcomes

Implementation of the NICHE model using the GRN model and GIAP survey improved health outcomes in hospitalized elders. A pilot study was conducted on two 47-bed units: one was an orthopedic/respiratory care unit where 40% to 60% of the patients were 70 years or older; the other was an acute medical surgical unit where approximately 35% were at least 70. Staff responses to the GIAP indicated that caring for confused elders was a problem throughout the institution. A multidisciplinary team, which consisted of a geriatrician, geriatric nurse practitioner (GNP), a professional practice specialist who was also a gerontology clinical nurse specialist (PPS), and an acute medical/surgical/gerontologic clinical nurse specialist, conducted roundtable education sessions for staff and set the goal of improving the staff's ability to manage care for elders who were confused. The education sessions included discussion of assessment and pharmacologic and non-pharmacologic management of confusion in elders. The process used in the roundtables was to involve the staff in discussion and encourage them to relate what they were learning to their practice. The outcome of this intervention was a steady decline in confusion among acutely ill hospitalized elders. The incidence of confusion for all orthopedic patients 70 and older was initially 20% (n = 199) for the first two months of the program. It declined every month to 4.8% (n = 54). This low rate however was not sustained one year later. There was a gradual increase to 14%. At the end of 2001, the incidence of confusion following orthopedic surgery decreased to 12.8%



(n =211) (Guthrie, Edinger, & Schumacher, 2002).

Pfaff (2002) reported improved outcomes in relation to geriatric syndromes at Waukesha Memorial Hospital (WMH) in Wisconsin when the GRN Model and NICHE was adopted. Over a two-year period, the prevalence of hospital-acquired urinary incontinence dropped from a range of 14% to 31% in 1999, to 7.6% to 25% in 2000; and from 12% to 18% in 2001. Also remarkable was the increase in the use of toileting schedules and interventions to prevent incontinence. In 1999, the range was 0% to 8.8%; in 2000, it was 7.6% to 11%; and in 2001, it was 6% to 14%. Pfaff concluded that while they cannot assume that the GRN and the NICHE models were the cause of the decrease in urinary incontinence and the increase in toileting schedules, the improvement in trends led them to believe that these models influenced improved health outcomes.

Cochran (2005) reported that fewer than 3% of elders who were 70 years or older needed to be discharged to a nursing home or assisted living after hospitalization since elders were cared for on an ACE unit. Previous to care on the ACE unit, 25% of elders never returned to their previous living situation because of functional decline following hospitalization.

A randomized clinical trial was undertaken to evaluate the effectiveness of the ACE unit at University Hospitals of Cleveland (Landefeld et al., 1995). Six hundred fifty-one patients age 70 and older were admitted for general medical care and were randomly assigned on either a medical nursing unit or an ACE unit. Medical care on the ACE unit included usual care plus ACE intervention. The patients were similar in their baseline characteristics. Among 603 patients discharged from the hospital, basic ADL function (measured as independence in bathing, dressing, toileting, transferring from bed to chair

and eating) was better at discharge than on admission in 34% of patients receiving ACE intervention when compared with 24% of patients receiving care without ACE intervention. ADL function was unchanged in 50% of ACE unit patients compared with 54% of patients receiving usual care. ADL function was worse in 16% of patients receiving ACE intervention compared with 21% of patients receiving usual care ( $p < 0.01$ ). Fewer patients receiving ACE were discharged for the first time to institutional long-term care settings ( $p = 0.02$ ). Mean hospital charges and length of stay were 12% and 17% lower respectively for patient receiving ACE, although these differences were not statistically significant (Landefeld et al., 1995). In a similar study at Akron City Hospital Akron, Ohio, Counsell et al. (2000) conducted a randomized controlled trial to test the hypothesis that hospitalized patients age 70 years and older who received the ACE intervention would have greater levels of ADL functioning at discharge compared with patients receiving usual care on traditional general medical nursing units. The sample's mean age was 80. The study found a trend toward better functional status at hospital discharge in the ACE intervention group than in the baseline group. A composite outcome of ADL decline from baseline or nursing home placement was less frequent in the intervention group at discharge (34% vs. 40%;  $p = 0.027$ ) and during the year following hospitalization ( $p = 0.022$ ). Mobility was significantly better at hospital discharge in patients receiving the ACE intervention and satisfaction with care was higher for the intervention group than the usual care group among patients, caregivers, physicians, and nurses ( $p < .05$ ) (Counsell et al., 2000).

Other models of acute elder care have been reported in the literature. Tucker et al. (2006) reported positive outcomes from the Older Adult Services Inpatient Strategies

(OASIS) Program/Pilot. The goal of the program was to prevent the negative effects of hospitalization, maintain strength and mobility, and maximize independence for older patients. Outcomes tracked were LOS, readmission rates, iatrogenic complications, fall incidence, disposition, function at discharge, and patient satisfaction. OASIS was developed from the components of geriatric models of care in the literature and best practices of existing geriatric programs. Two medical units were joined and led by a clinical nurse specialist (CNS). Patients 70 years of age and older were directed to the unit by the admissions department of the hospital. An interdisciplinary team was formed and led by the CNS, who conducted rounds with the input of staff nurses. A volunteer component was used in this model to provide companionship and mental engagement for the patients. They were trained by speech pathologists to feed non-dysphagic patients, to transfer and walk patients by Physical Therapy, and to manage behaviors common in dementia by the Geriatric Case Manager known as the Sixty Plus Department. Volunteers were shown massage therapy as a relaxation technique to be used to improve sleep, anxiety, and agitation for elders. Volunteer hours were structured around mealtimes and early evening to support mobilization, nutrition, and sleep enhancement. The physical environment of the OASIS intervention unit had the attributes cited in the literature of an “elder-friendly unit” such as large clocks and message boards in the rooms, railings in the hallways, and a lounge for patients and families. During the piloting of the OASIS unit, there was no incidence of iatrogenic complications such as hospital-acquired pneumonia, pressure ulcers, delirium, UTI, or thrombus. In addition, there was no decline in function from hospital admission with 95% of patients discharged to their original place of residence. The fall rate was equal to that of the hospital, which is positive since the fall

rate for the hospital is not age-specific and elders had an increase in activity in the OASIS program. Other positive outcomes included improvements in LOS, cost of hospital stay, and readmission rates within 30 days. Compared with the control group, the sample LOS was 1.22 days shorter on average, the total average cost was 33% less and the readmission rate was the same (5.9% vs. the control at 6.6%). The annual potential cost saving was reported at \$636,059 and an increase of 326 bed days. Patient and family satisfaction scores indicated 90% satisfaction with the quality of care received and 100% willingness to recommend the program to others (Tucker et al., 2006). OASIS and NICHE are examples of care models that demonstrate improved health outcomes when care is focused on eliminating risks of elder decline. There are no known OASIS units in the state of New Jersey, therefore the NICHE model of care will be used for this study.

#### Theoretical Literature: Nurse Caring

The earliest writings that connect caring with nursing arise from Florence Nightingale's Notes on Nursing written in 1860. Nightingale suggested that human suffering was not the result of disease but "the want of fresh air, light, warmth, quiet, cleanliness, punctuality and *care*. . . ." (Nightingale, 1860, p. 5). Nightingale (1860) connected caring with nurse presence when she commanded that "a careful nurse will keep a constant watch over her sick especially the weak . . ." (p. 11).

In contemporary nursing literature, caring theory became most visible and connected to nursing through the work of Jean Watson (1979), when she linked caring to the education that nurses receive. She recommended that caring education should continue throughout the life of the nurse by raising "caring consciousness" and taking a moment before interacting with a patient to determine what the outcome of nursing interaction

should be. She defined the concept of caring comprehensively from which the theory and science of caring evolved. She took the invisible concept of caring and converting it into tangible attributes that could be measured, tested, confirmed, and developed into nursing theory. In her latest works Watson brought the theory of caring to a spiritual level, and described it as a personal experience that knows no time or boundaries. Watson believes that caring has a “rippling effect” that can unify all of mankind (Watson, 1979, 2002, 2005, 2008).

Leininger (1993) linked caring to the very core substance of nursing, and explained that the dichotomous nature of caring which lends itself to being both an “abstract and concrete” phenomenon makes it difficult to define. Leininger (1993) posited that caring in nursing is characterized by nursing actions or behaviors which assist, support, or enable individuals to lessen a burden or illness, and is essential for well-being, health, healing, growth, survival and facing handicaps or death. Patistea (1999) emphasized that caring is an essential human need. Watson (1979) proposed that caring consists of humanistic-altruistic feelings and behaviors that promote the best professional care and the most mature social contributions.

A composite framework of nurse caring behaviors is derived from the theoretical literature on caring. The attributes are organized into four broad caring behaviors: The initiation of a helping/trusting/therapeutic relationship, providing support for a therapeutic environment, identifying and solving problems, and assisting with gratification of human needs. Each of these behaviors is discussed which gives further clarification to caring attributes, and thus, enhances clarification and clinical application of the theory.

Theoretical and empirical literature suggests that nurse caring behaviors can create a dynamic and unique relationship between the nurse and the patient and this relationship can effect, in a positive way, health outcomes (Erci et al., 2003; Watson, 2008). The behaviors of physical presence and mental focus on what the patient is experiencing, listening actively and attentively to discover what the patient deems as important, responding with empathy and care, and helping the patient to attain resolution of unmet needs create a dynamic field that can elevate an individual from low to higher levels of health and wellness (Brilowski & Wendler, 2005; Swanson, 1999; Watson, 1979; Watson, 2005; Watson, 2008). Watson (1979) operationalized nurse presence: offering self, providing comfort, and treating the patient as a family member, displaying compassion, teaching and learning, and giving information about health status to reduce stress caused by uncertainty. Being present means going above and beyond what is expected, persisting under adverse conditions, and advocating for the patient (Bulfin, 2005). With nursing presence, the nursing self is extended for the betterment of the patient; the patient is accepted along with his or her expression of positive and negative feelings (Bulfin 2005; Watson, 1979).

In the caring relationship, the nurse is comfortable with self, honest, genuine, sensitive to self and others, and displays warmth. Warmth is displayed through gestures, a relaxed and easy open posture, touch, moderate tone of voice, and unconditional positive regard, in which the nurse values the patient without judging or evaluating feelings (Graber & Mitcham, 2004; Watson, 1979). The nurse demonstrates acceptance, which is communicated through empathy, love, concern and calmness, and welcomes the patient's uniqueness. The patient is viewed and respected for individual differences and the nurse

displays the ability to change according to the needs of the patient (Brilowski & Wendler, 2005; Bulfin, 2005).

Providing support for a therapeutic environment consists of meeting the patient's needs for safety, protection from contagious microorganisms, autonomy and meeting comfort, privacy, and advocacy needs (Lynn & McMillen, 1999; Watson, 1979). Caring actions are accomplished by manipulating the environment to achieve change for the betterment of the patient (Brilowski & Wendler, 2005; Felgen, 2004).

Using the scientific method to identify and solve problems is an attribute of caring as it ensures effective nursing practice, and eliminates accidental and haphazard practice. It allows for control, prediction, and self-correction. It can guard against making suboptimal decisions based on trial and error, experience, intuition, faith, custom, or habit (Watson, 1979).

Identifying and meeting basic and higher level needs are attributes of caring. This includes demonstrating competence in knowledge and skills inherent to nursing to provide what is necessary to meet those needs (Brilowski & Wendler, 2005). Needs are met according to the priority for sustaining life, and those that matter to the patient (Bulfin, 2005).

While the concept of caring is universal, the meaning of caring and its expression varies according to one's unique perspective such that, a nurse's expression of caring, and a patient's expectation of care that should be received is subjective and individually derived. Therefore, caring behaviors should be expressed with knowledge of the patient in mind (Leininger, 1993; Swanson, 1999). Furthermore, the philosophical perspective of caring is the most prevalent throughout the literature and identifies caring elements as

love, compassion, trust, nurturance, concern, presence, healing, empathy, sensitivity, altruism, self-less, commitment, conscience, provision for spiritual environment, gratification of needs, deep interest in humanity, and alleviation of suffering, (Patistea, 1999; Watson, 1979, 2008).

Theorists propose that education, knowledge, and closely examining a professional belief system can raise one's consciousness for a caring value system (Brilowski, & Wendler, 2005; Watson, 1979). To care, one must have an understanding of caring and how to express it, (Patistea, 1999). Swanson (1999) emphasized that *knowing* is an important factor of nurse caring in which the nurse understands the subjective meaning of the patient's experience as the patient experiences it. In *knowing*, nurse caring can be realized when the nurse avoids making assumptions about the other's experience, centers on the one being cared for, and conducts a thorough ongoing cue-seeking assessment, the goal of which is to understand the personal reality of the one being cared for.

The theoretical literature suggests that caring behaviors have a positive effect on patients, nurses, and humanity. The benefits of caring are healing (Brilowski & Wendler, 2005), cure (Leininger, 1993), improved health, individual or family growth, and the development of potential (Watson, 1979). Caring can alleviate anxiety and human suffering, and improve quality of life for recipients (Brilowski, & Wendler, 2005). Caring results in emotional-spiritual well-being, safety, and comfort. It also is lifesaving, decreases alienation, and enhances trust relationships (Swanson, 1991, 1999). Patients are satisfied with care when caring behaviors are implemented (Davis & Green, 2005; Elder, Davis, Almes, Littleage, 2004; Wolf et al., 1998; Wolf, Miller, Devine, 2003). Nurses reported increased job satisfaction from caring for patients (Brilowski, & Wendler, 2005).



Caring enhances personhood (Bulfin, 2005), and provides a holistic service to humanity (Patistea, 1999).

Wiman and Wikblad (2004) asserted that nurses, in the absence of nurse caring, were described by patients as being busy with practical duties based only upon physician orders. There was no attempt by the nurse that could be interpreted as being involved in the patients' world. Nurses' actions in the absence of nurse caring were identified as disinterest or inattentiveness to the patient and the patient's needs, doing procedures to the patient without saying a word to the patient, and insensitivity. In the absence of nurse caring, nurses would be busy with technical duties and demonstrate no communication with the patient, coldness by acting mechanically, and would behave business-like, and lacking kindness, and inhumanly by ignoring the patient as a person (Wiman & Wikblad, 2004).

Caring is necessary for the survival of humanity, for the continuation of the human species, and for the evolution of a more loving, caring, and humane community and civilization. Thus caring must be sustained and perpetuated in the life, world, and work of nursing (Watson, 2008).

In summary, caring is an imperative for the continued existence of the nursing profession, albeit, all of humanity. Nurse caring behaviors are characterized by the formation of an attentive relationship with an individual who is in a vulnerable state and needs assistance, as well as providing a comfortable environment, assisting with problem solving, and meeting basic and higher level needs of life. Nurse caring behaviors can result in the positive health outcomes of cure, healing, well-being, quality of life, and satisfaction with nursing care. Education and knowledge, knowledge of how to care, and

knowledge of the self and patient are antecedents of caring. The consequences of nursing care without nurse caring behaviors are distancing, mechanical, cold, and unpleasant and lead to dissatisfaction with care. Nurse caring behaviors play an important role in patient satisfaction with care (Brilowski & Wendler, 2005; Bulfin, 2005; Davis & Green, 2005; Elder, et al., 2004; Leininger, 1993; Patistea, 1999; Swanson, 1999; Watson, 1979, 2008; Wiman & Wikblad, 2004; Wolf, et al., 1998; Wolf, et al., 2003).

#### Empirical Literature: Relationship of Nurse Caring Behaviors and Satisfaction with Care

Empirical literature suggests a relationship between patients' and/or elders' perceptions of nurse caring behaviors and satisfaction with care. It also suggests that the absence of elders' perceptions of caring behaviors leads to dissatisfaction with care.

Wolf et al. (1998) found a strong, positive correlation ( $N = 335$ ,  $r = 0.78$ ,  $p < .001$ ,  $R^2 = 61.46\%$ ) between patients' reports of nurse caring behaviors and satisfaction with nursing care using the Caring Behaviors Inventory (CBI) (Wolf et al., 1994) and Patient Satisfaction Instrument (Hinshaw & Atwood, 1981). Wolf et al. (2003) also found a moderately strong, statistically significant relationship between cardiac patients' reports of nurse caring and their satisfaction with nursing care the evening of cardiac procedures ( $N = 73$ ,  $r = 0.53$ ,  $p = 0.01$ ). The variance shared by these variables was  $R^2 = 26.3\%$ .

Using a structural equation model, Larrabee et al. (2004) tested a convenience sample of patients ( $N = 362$ ) using the Patient's Judgments of Nursing Care Questionnaire and the Caring Behaviors Inventory (CBI) on two medical units, two surgical units, and three intensive care step-down units. They found that patient-perceived nurse caring was significantly and positively correlated with patient satisfaction ( $r = .69$ ,  $p < .05$ ), and carried the strongest magnitude among all other variables tested.

Williams (1997) asserted that when patients perceived that caring was evident, they were more satisfied. Patients rated sensitive caring, i.e., sensitivity to feelings and needs, and physical caring highest. Sensitive caring was the best predictor of patient satisfaction. This suggests that patients value the affective aspect of nursing care over physical care. Patients rated interpretive caring, which is interpreting the meaning of their feelings, and spiritual caring lowest. There were significant positive relationships between age and patient's perceptions of global caring, interpretive caring, and spiritual caring. There was no relationship between age and satisfaction with care. Gender made no difference in perceptions of caring or in patients' satisfaction with care. This suggests that while patient variables confounded the relationship between nurse caring and patient satisfaction, no patient variable was significantly related to either global satisfaction with care, or any of the three satisfaction subscales: technical-professional activities, characteristics that enhance trust, and educational activities. Pain was negatively related to perceptions of holistic caring (Williams, 1997).

Palese et al. (2011) tested a sample of 1,565 surgical patients from hospitals across six European countries using the Caring Behaviors Inventory (CBI) (Wolf, 1994) and the Patient Satisfaction Scale (PSS) (Kim, 1988). Patients perceived caring behaviors by nurses between the scores of 5 (very frequently) and 6 (always). Patient satisfaction with nursing care was high, between scores of 3 (satisfied) and 4 (very satisfied). There was a positive correlation between the CBI and the PPS ( $r = 0.66, p < .01$ ). Among the CBI dimensions, "connectedness" explained patient satisfaction ( $R^2 = 0.404, p < .001$ ), followed by "assurance" ( $R^2 = 0.032, p < .001$ ), and "respectful" ( $R^2 = 0.005, p < .001$ ).

#### Empirical Literature: Elders' Perceptions of Nurse Caring

Clayton (1989) studied the caring relationship between elderly person and nurse using grounded theory and a phenomenological approach. Interviews were conducted with four elderly person-nurse dyads in which elders and nurses recalled peak or highlight experiences that described caring encounters. In these experiences elders indicated the existence of a helping trusting relationship characterized by behaviors of nurses that led to trust. These behaviors included making eye contact, having the patience to let elders do things for themselves when possible, a calm attitude and voice tone, and the general impression of liking their work and wanting to work with older people. The nurses recognized that elders needed independence, individuality, and respect. In the caring dyad the nurse appreciated the struggle of the elder. Elders also described an environment that was characterized as permissive but also supportive and protective so that independence was maintained as much as possible. Elders expressed recognition that nurses appreciated and understood elders' situations. This study supported caring theory by Watson (1979) who proposed that nurse caring behaviors consist of those actions that connect the nurse with the patient at a higher level of relationship. In Clayton's (1989) study, this higher level of relationship was evident by the dyads' report of trust, sensitivity to each other, calmness, eye contact, respect, and demeanor within the dyad.

Empirical Literature: The Relationship of Elders' Perceptions of Nurse Caring Behaviors and Satisfaction with Nursing Care

Hancock et al. (2003) conducted a study with three aims: 1) to determine aspects of nursing care deemed important by older patients, their families who observed care during hospitalization, and nurses; 2) satisfaction levels of patients, families, and nurses on nursing care received; and 3) mismatches between nursing care priorities and satisfaction

with nursing care. Two hundred thirty-two acutely ill patients over 65 years with minimal exam scores of 19 or better, regardless of frailty were sampled. Ninety-nine families and 90 nurses completed the Caregiving Activities Survey (CAS) which measures importance of and satisfaction with various aspects of nursing care in four categories: physical care, psychosocial care, doctors' orders, and discharge planning. In addition, qualitative data that added clarification to survey items were also obtained. Patients and nurses rated implementing, observing, and reporting doctors' orders as most important. Nurses and family members rated physical and psychosocial aspects of nursing care and discharge planning as more important than elders. For all groups, there were significant differences in satisfaction. Satisfaction with following doctors' orders was rated most high in terms of satisfaction ( $p < 0.001$ ) for all groups and significantly higher than the other three categories ( $p < 0.001$ ). In all three groups, satisfaction with physical care was significantly higher than that with psychosocial care and discharge planning ( $p < 0.01$ ). Mean satisfaction ratings relating to discharge were low to moderate for all three groups, with patients giving the lowest ratings. In the qualitative data, the recurring comment by all groups was that nurses did not have the time to provide all aspects of care, most frequently psychosocial care and discharge planning. Patients' and family members' low importance and satisfaction ratings for discharge planning were attributed to not seeing this as part of the nurse's role. Nurses commented that they did not rate physical care as important because they believed it was more important to encourage patients who were able to perform self-care to maintain patients' levels of independence in order to prepare them for discharge. Hancock et al. (2003) suggested that perhaps nurses only provide physical care to those who are dependent, and expect

self-care of those who are able, and that it is important for nurses to communicate the expectations and delivery of their care. Elders come from a generation in which nurses were viewed as subservient to physicians and might see the dependent role of the nurse as most important. Hancock et al. (2003) concluded that to enhance satisfaction with care more attention must be given to communicating to elders about the nurses' role, as well as what the expectations of family members and elders are for nursing care.

Theorists and researchers suggest that manifestations of nurse caring for hospitalized elders are not always explicit in nurse and elders interactions. Ellis (1999) indicated that caring behaviors applied to elders by nurses may be inconsistent. Nurses may have developed a construct of caring and give care based on a model that is grounded in their own experience, intuition, and interpretation of knowledge.

Using Ricoeur's phenomenologic hermeneutics to describe elders' experience of care received in the hospital, Ekman et al. (1999) analyzed the interviews of 12 elders with severe chronic heart failure. Elders reported their hospital experience as being incomprehensible. They reported not able to distinguish one caregiver from another. They described as often being talked about in the third person, with caregivers talking about them, not to them. Ekman et al. (1999) described this as liminality, which denotes a transition from one's normal position in society. It is a state in which one is reduced to a passive humble and obedient state. While they felt confident in the help they were receiving to ease their medical symptoms, they lost confidence because they did not understand what was happening to them, therefore they felt dissatisfied with care and would delay seeking medical care in a hospital setting.

Hospitalized elders alluded to dissatisfaction with nursing care in a triangulation study

done by Turner et al. (2001) who obtained qualitative data from a sample of 65 elders from a general medical surgical unit and from an elder care unit. Data were obtained from structured interviews and analyzed by constant comparative content analysis. In answer to the question: "Should nurses who care for older adults have special training?" Fifty-three percent of the control group and 65% of the study group (59% overall) agreed that nurses should have specialized training in the care of older adults. They described this training as knowledge and understanding of older adults' special needs. Turner et al. (2001) reported that elders were not satisfied with nursing care because nurses did not seem to understand them and how to care for them with their inherent frailties. Both groups of elders identified that nurses should be alert and attentive to health changes that might be exacerbated by the aging process. Elders in both groups explained that nurses needed to focus on interactive skills such as patience, kindness, gentleness, caring, responsiveness, and liking older people. The respondents stated that these skills were more prevalent in older more experienced nurses in contrast to younger nurses. Elders reported that they do not get the care that they want or need, nor do they get care that they feel is important to them from younger nurses. Elders expressed that younger nurses needed to understand the older person, be kinder, pay attention to elders' needs, and need training to be sensitive to older people who cannot do for themselves. Elders responded that they had "special needs" based on the aging process; they were "fragile" with "decreased reserve" because they stayed ill longer.

In summary, these empirical studies tested and supported the theorized relationship between hospitalized elders' perceptions of nurse caring behaviors and their satisfaction

with care. Ekman et al. (1999) conducted a qualitative study that suggests that the absence of caring behaviors results in dissatisfaction. This finding gives further strength to the theoretical relationship suggested in this study, that is, nurse caring behaviors are linked to satisfaction with care. None of these studies, however, tested this theoretical relationship in the hospitalized elder population or examined factors such as unit type that might influence this relationship. Research that tests this important theoretical relationship among elders is needed in order to better understand the determinants of nurse caring behaviors and satisfaction with care in elders.

Empirical Literature: Relationship of Elder's Perception of Nurse Caring, Unit Type, Health Outcomes, and Satisfaction with Care

Researchers suggest a relationship between elders' perceptions of nurse caring behaviors and the type of environment where care is delivered. Smith and Sullivan (1997) used the CARE-Q instrument to compare rankings of important caring behaviors as perceived by both patients and nurses in a nursing home care unit at a Veterans Affairs Medical Center. A convenience sample of 12 men and 2 women and 15 registered nurses was used for the study. The 10 most important caring behaviors were ranked according to importance for both patients and nurses. Significant differences in mean score were calculated for the 50 behaviors using the independent  $t$  test and the statistical level of significance set at  $p < 0.05$ . Nurses and patients agreed on 6 of the 10 most important behaviors: three were instrumental behaviors described as nursing skills, and three were expressive behaviors, described as affective caring behaviors. This agreement about their perceptions of the most important caring behaviors could indicate harmony between nurse and patients' perceptions of caring. Smith and Sullivan (1997) conjectured that the



agreement could be due to the fact that the nurses in this setting had established long-lasting relationships and knowledge of what the patients needed. The nurses had become attuned to what was important to the patients.

Turner et al. (2001) studied the effectiveness of the GRN model of care. The goal of this model was for unit-based nurses who had participated in geriatric continuing education programs to provide the best bedside geriatric nursing care and to be a resource to other unit staff. The emphasis of the GRN was to mentor bedside nurses to increase their geriatric knowledge and empower them to be proactive caregivers and advocates of elders and family members. The GRN role differed from the role of the advanced practice gerontological nurse in that the advanced practice gerontological nurse functioned as consultant and educator when patient problems developed. Turner et al. (2001) used both quantitative and qualitative methods to 1) assess the GRNs' influence on administrative outcomes including total costs and hospital use on a unit where they practiced as compared to elders cared for on a unit where GRNs' were not part of the staff; 2) the GRNs' influence on health outcomes of elders on units where they practiced as compared to a unit where GRNs are not part of the staff; 3) the GRNs' influence on elders' perceptions of care and outcomes on units in which they practiced as compared to elders who receive care where GRNs are not part of the staff; and 4) the influence of demographic characteristics of the sample on administrative or health outcomes. A sample of 65 elders from each unit was selected. Qualitative data were obtained from structured interviews and analyzed by constant comparative content analysis. Data for health status and outcomes were taken from the patients' records. There were significant differences between groups on units where there was a GRN and a unit where there was

no GRN. On the unit without GRNs elders were found to have more problems with pain, incontinence, and mobility. Other differences were that patients readmitted to the hospital within 31 days of discharge and the length of stay associated with this initial readmission were significantly lower on the unit with GRNs. The use of vest restraints was also less frequent on the unit with GRNs. Vest restraints were used in 12.7% of the controls (unit where GRNs are not part of the staff) and 1.5% of the intervention (units where GRNs are part of the staff) ( $p = 0.013$ ).

Wallace et al. (2006) asserted that a geriatric nurse education program can improve attitudes and increase knowledge of geriatric nursing care. Thirty-six questions from the Geriatric Institutional Assessment Profile designed to measure knowledge of common geriatric syndromes was used following the implementation of an 8-week educational program in gerontological nursing that was designed to prepare registered nurses to care for elders. Paired  $t$  tests were used to compare pretest measures of geriatric attitudes ( $M = 117.67$ ;  $SD = 14.4$ ) and knowledge ( $M = 151.94$ ;  $SD = 11.75$ ) with posttest attitudes ( $M = 120$ ;  $SD = 12.1$ ) and knowledge ( $M = 153.94$ ;  $SD = 16.5$ ) scores. There were no significant changes in total measures of each variable. However, the individual instrument items “most old people are really no different from everyone else” ( $t = 2.279$ ,  $p = .037$ ) and “old people have the same faults as everyone else” (p. 216) ( $t = -2.163$ ,  $p = .046$ ), explain that participants changed their opinion on these negatively worded items from agreeing with them to disagreeing or strongly disagreeing with them. The significant changes in these items showed an improved sensitivity for the specialized needs of elders in comparison to the population at large (Wallace et al., 2006).

Chang et al. (2003) supported the relationship of unit type influencing elders’

perceptions of nurse caring and satisfaction with care. They studied the influence of elders' demographic characteristics of age, gender, and cultural background with perceptions of the importance of and satisfaction with various aspects of nursing care. Two hundred thirty-one elders, 90 nurses, and 99 caregivers completed the Caregiving Activities Survey (CAS), which has four categories, including physical care, psychosocial care, observing, reporting, and implementing doctors' orders, and discharge planning. Elders, their families, and nurses from units specializing in care of elders were compared with general medical wards to determine if there were differences in these perceptions. The results demonstrated that elders greater than 80 years of age, and females from elder care units perceived that physical aspects of nursing care were more important than did younger elders who were 65 to 80 years of age, male, and from medical units ( $F_{1,229} = 11.29, p < 0.001$ ), but on no other categories of importance. There was a discrepancy between nurses who worked on a medical unit and those who worked in a unit specifically for aged patients. Older elders and those from elder units were more satisfied with physical care ( $F_{1,229} = 22.29, p < 0.001$ ). Qualitative data on ward type demonstrated that 75% of nurses from elder care units knew that older patients needed more physical assistance compared to only 50% of nurses on the medical unit being sensitive to this need.

In summary, unit type, where nurses know the patients or who have specialized education in the care of elders, enhances elders' perceptions of nurse caring behaviors and is noted as *wanted* by elders. These studies suggest that unit type might influence elders' perceptions of nurse caring and satisfaction with nursing care. Further inquiry is needed to show evidence that hospital unit type could influence elders' perceptions of

nurse caring behaviors and their satisfaction with nursing care as well as positive health outcomes. The study conducted by Chang et al. (2003) is the only study found that supports the relationship of unit type influencing elders' perceptions of nurse caring and satisfaction with care. The study was conducted in Sydney, Australia. No studies of this type have been conducted in the United States. This study suggests that unit type and age of elder influences perceptions of care, and that nurses who work on elder care units are more perceptive to the needs of their elder patients. This study suggests that further investigation is needed in the United States.

### Theoretical Rationale

Nurse caring behaviors are desired and needed by individuals who seek health care (Duffy & Hoskins, 2003; Watson, 1979, 2008). Satisfaction with care is an outcome of an individual's perceived nurse caring behaviors within the hospital environment (Larrabee, et al., 1995; Mahon, 1995; Watson, 1979, 2008; Wolf et al., 1998; Wolf et al., 2003).

Elders can experience vulnerability that can be further exacerbated during times of ill health. Elders need and desire nursing care (Ebersole et al., 2005). Nursing care is enhanced when it is accompanied with caring behaviors (Duffy & Hoskins, 2003; Watson, 1979, 2008). Elders who receive care without nurse caring behaviors could experience dissatisfaction with care and withdraw from seeking much needed nursing intervention (Ekman et al., 1999). Education and knowledge are important antecedents for nurse caring. Nurses who have knowledge of caring for elders might have a positive effect on their attitudes and moderate elders' perceptions of caring behaviors and satisfaction with care (Patistea, 1999; Smith & Sullivan, 1997; Swanson, 1999; Turner et al., 2001; Wallace et al., 2006; Watson, 1979, 2008).

Implementation of models of elder care as proposed by NICHE, including the ACE model, can lead to elders' satisfaction with care and their health outcome of functional status because these models integrate the theoretical concepts of caring such as nurse presence, education, and knowledge of elder care as well as communication, team collaboration, and elder-focused care.

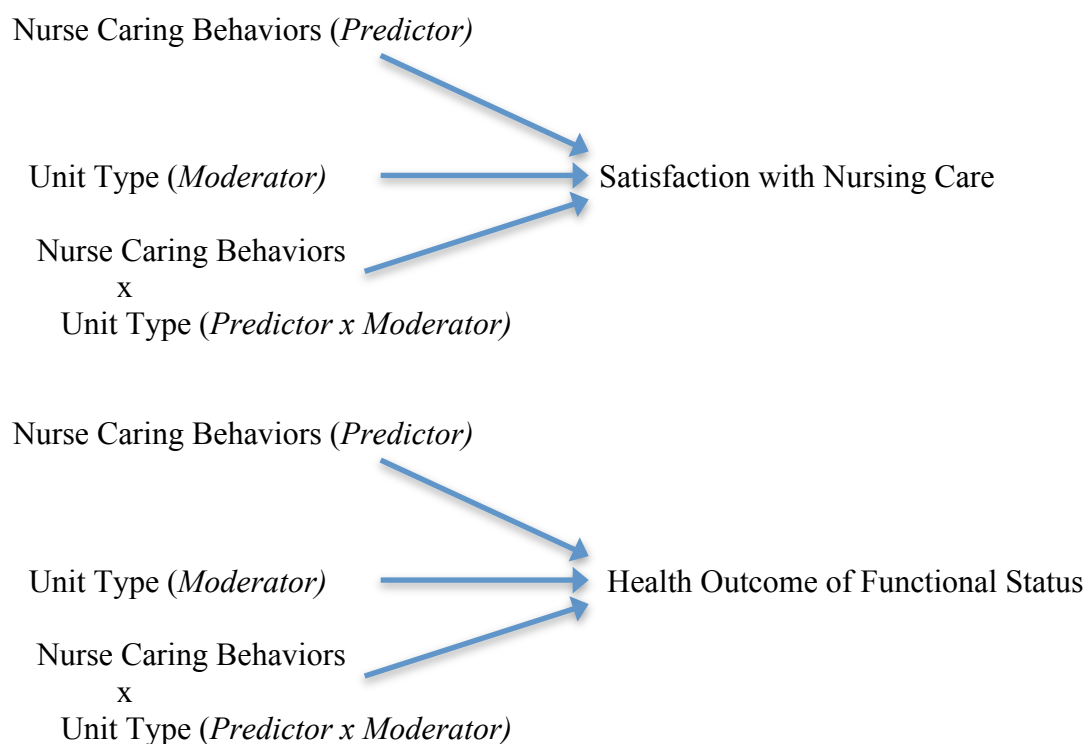
The following hypotheses were investigated:

1. Hospitalized elders' perceptions of nurse caring behaviors are positively related to satisfaction with nursing care.
2. Hospitalized elders' perceptions of nurse caring behaviors are positively related to the health outcome of functional status.
3. Hospitalized elders will report more nurse caring behaviors on the ACE unit than hospitalized elders on the Telemetry unit.
4. Hospitalized elders will report more satisfaction with nursing care on the ACE unit than hospitalized elders on the Telemetry unit.
5. Hospitalized elders who were cared for on the ACE unit will have less functional status decline upon discharge than hospitalized elders who were cared for on the Telemetry unit.
6. Type of care unit moderates the relationship between hospitalized elder's perceptions of nurse caring behaviors and satisfaction with nursing care.
7. Type of care unit moderates the relationship between hospitalized elders' perceptions of nurse caring behaviors and the health outcome of functional status.

Correlates of Hospitalized Elders' Perceptions of Nurse Caring Behaviors, Type of Care Unit, Satisfaction with Nursing Care, and the Health Outcome of Functional Status



Moderation Model



## CHAPTER 3

### Methods

This chapter describes the design for this research. The research setting, sampling methods and sample, as well as the instruments and the procedures for data collection will be described.

A non-experimental design was employed in this study. A non-experimental design is used when relationships and differences among variables are being tested. In non-experimental designs the independent variables are not manipulated, and there is reason to suspect a relationship between variables through literature and other research (LoBiondo-Wood & Haber, 2006).

In this study, these relationships were explored. In non-experimental research subjects are not randomized and there is no control group. The sample is, as it exists in the population (Kerlinger & Lee, 2000; LoBiondo-Wood & Haber, 2006). The aim is to test the hypothesis and to explain the phenomena of interest.

LoBiondo-Wood and Haber (2006) recommended that with non-experimental research the researcher has to make a conscious effort to control the independent variables, which if not done, can be a threat to validity. The way to control for confounding variables in non-experimental research is by establishing specific sampling criteria and identifying subjects with similar characteristics. The instruments used for data collection should have established reliability and validity, and data collection methods should be similarly used with all subjects.

The category of non-experimental design of this study was predictive correlational. It included testing the strength of the relationship between variables of nurse caring behaviors with nursing care satisfaction, nurse caring behaviors with the health outcome of functional status, and it also included correlated groups, that is, two types of hospital units on which elders received care. Kerlinger and Lee (2000) noted that the principle behind correlated group designs is that there is a variance in the dependent variable due to the correlation between the groups on a variable related to the dependent variable. In

this research, the variance was on the dependent variables elders' satisfaction with nursing care and the health outcome of functional status because of the relationship of the independent variables, that is, the differences in perceived nurse caring on a general medical unit versus an ACE unit. The intended value of this research was to capitalize on the differences in nurse caring behaviors between the units, and to identify if the type of care unit on which an elder was placed moderated the outcomes of elder's satisfaction with nursing care and the health outcome of functional status.

A moderate relationship was anticipated between the independent variables elders' perceptions of nurse caring behaviors and satisfaction with nursing care, and elders' perceptions of nurse caring and their health outcome of functional status. To conduct a correlation, an alpha of 0.05, moderate effect size  $r = 0.30$ , and a power of 0.80, 68 subjects would have been adequate from each unit, for a total of 136 elders (Cohen, 1988). However, for a Chi-square and 2 groups of subjects, a moderate effect and probability of .05, 90 from each group would yield a power of .81 (Munro, 2005). The final total sample size was 180 subjects with 90 obtained from each unit.

### Research Setting

The research sample was drawn from an Acute Care Elders (ACE) unit and a medical-surgical Telemetry unit within a 321-bed acute care medical center in the Northeastern United States. This health system implemented NICHE units at various affiliated hospitals beginning in 2002. All nurses employed by the health system received a two-hour, system-wide orientation on the concept of NICHE, and the topics of fall prevention, and geriatric sensitivity. Specific topics included visual changes, arthritic and perceptual changes, hearing loss, and methods of communication with hearing and cognitively



impaired elders. The lecture content incorporated a comprehensive theoretical knowledge base related to caring for elders using evidence-based practice guidelines (L. Hassler, personal communication, May 20, 2012).

### **Unit Characteristics**

The ACE unit and Telemetry/ICU step-down unit were chosen for this study because of the similarities of elders' conditions and the distinct differences in approaches to nursing care of the hospitalized elder. The admission criteria to the ACE unit included being 65 years of age or older, however if a bed was needed, a younger individual was admitted. Approximately 75% of patients admitted to the ACE unit were age 65 years and older. Approximately 68% of patients admitted to the medical telemetry unit were age 65 and older. The average length of stay in the ACE unit was 4.02 days; the average length of stay in the Telemetry unit was 3.5 days. Both units admitted patients with similar medical diagnoses. For example on one day both units had patients with cellulitis, septicemia, UTI, Pneumonia, renal failure, CHF, COPD, and hypertension (L.J. Hassler, K. Hoos, F. Tisseverasinghe, personal communication, May 17, 2012).

The physical environment of both units was different. The ACE unit had a common sitting area and railings in the hallways. There was large print signage, low glare wax on the floor, up lighting, and soothing beige colors. Every room had a geriatric chair; bathrooms had showers. There were several nurses stations positioned in the center and at the ends of the hallways with a nurse present at each station. The nurses' stations were at wheelchair height. In contrast, the Telemetry unit was painted blue and had a high standing height nurses' desk only at the center of the unit. Technical equipment was visible throughout the hallways and there was no common area.

The nurses throughout the hospital worked 12-hour shifts. The nurse-to-patient ratios varied slightly in both units; the ACE unit had a ratio of 1:6 on the 7am to 7pm shift and 1:8 to 1:10 on the 7pm to 7am shift; the medical Telemetry unit had a ratio of 1:7 or 1:6 on both day and night shifts (L.J. Hassler, K. Hoos, F. Tisseverasinghe, personal communication, May 17, 2012).

### **Differences in Nurses' Knowledge on Both Units**

The knowledge requirements for nurses employed on each unit differed. Certifications, unit orientations, and mandatory annual competencies varied in content and focus. Nurses who were employed on the ACE unit had to be, or eventually became, ANCC certified in geriatrics. Upon employment in the ACE unit, nurses were given a 14-hour class based upon the ANCC Geriatric Certification Core Curriculum and evidence-based geriatric protocols. Nurses employed in the ACE unit were expected to begin the process of becoming a system-defined Geriatric Clinical Scholar (GCS) after three months of working in the ACE unit. The GCS was similar to the role of the GRN within the NICHE philosophy. The GCS acted as a role model for nurses by promoting evidence-based care and best practices to improve care for elders on the ACE unit. Nurses who were employed in the ACE unit had to maintain annual competency in the assessment and nursing care of functional decline, delirium, and inappropriate use of medications for elders (Beer's Criteria). In contrast, nurses who were employed in the medical telemetry unit received an orientation in the topics of EKG monitoring, cardiac drugs, chest tubes, ventilators, vascular access devices, PCA pumps, blood products and transfusion, peritoneal dialysis. These topics guided the content of nurses' annual mandatory competencies. There was no additional orientation to elder care for the nurses

in the medical telemetry unit other than that of the Meridian Health System-wide orientation that every newly employed nurse received (L.J. Hassler, personal communication, May 17, 2012).

### **Differences in the Approach to Caring**

In the ACE unit, a geriatrician led a multi-disciplinary team who were educated in the needs of elders. This team created care plans to provide attention to the needs of inpatient elders and to achieve the best possible outcomes. The focus on the ACE unit was caring for the whole patient. This team approach to care in the ACE unit was accomplished by daily rounds and included the expertise of the geriatric clinical scholar (nurse), dietitian, pharmacist, physical therapist and social worker, and case manager. The goal was to return the patient to the pre-admission place of residence. In contrast to this, daily rounds in the Telemetry unit included nursing and medicine with the focus of “telemetry triage” to identify those patients who no longer required telemetry and could be discharged to another unit, rehabilitation center, or home. The focus of care in the Telemetry unit was the cure of disease; the focus of care in the ACE unit was holistic care of the elder of which the medical diagnosis was only one part. In the ACE unit, one of the goals of care is the return of the elder to their pre-illness level of function, or higher (L.J. Hassler, K. Hoos, F. Tisseverasinghe, personal communication, May 17, 2012).

### Sample and Sampling Method

The sample was a convenience sample. This means the sample at hand, and a non-probability quota sample (Kerlinger & Lee, 2000).

In non-experimental research, the independent variables cannot be manipulated or controlled. They are as they occur. For this reason, control was applied as much as

possible through homogenous sampling and consistency in data collection. The intent was to reduce or eliminate extraneous or mediating variables that might compete with the independent variables as an explanation for a study's outcome (LoBiondo-Wood & Haber, 2006).

The criteria used to obtain this sample are drawn from the literature on characteristics of elders that affect health status. Boyd et al. (2007) and Covinsky et al. (2003) found that the frequency of ADL decline varied, but increased with age beginning with age 70. Norris et al. (2007) noted that the prevalence of chronic disease increased with age, with 48% of Medicare beneficiaries 65 years of age and older having three or more chronic conditions, and 21% having five or more. The presence of multiple chronic conditions could have an effect on healthcare utilization and health outcomes. Therefore, based on the findings of Boyd et al. (2007), Covinsky et al. (2003), and Norris et al. (2007), the sample was defined as those age 70 and greater. Those who possessed two to four chronic conditions, and two or less acute conditions for which they were being hospitalized were included in the study to eliminate the confounders that can arise from additional chronic and acute illnesses.

### Instruments

The *Caring Behaviors Inventory for Elders* (CBI-E) (Wolf et al., 2006) was used to measure the independent variable of elders' perceptions of nurse caring. The *Patient Satisfaction Scale* (PSS) (Kim, 1988) was used to measure the dependent variable of patient care satisfaction. The *Katz Index of Activities of Daily Living* (Katz ADL Index) (Katz et al, 1963) was used to measure the dependent variable of functional status. The instruments CBI-E, PSS, and the Katz ADL Index are discussed below.

*Caring Behaviors Inventory for Elders (CBI-E)*

The instrument that best measured the variable of elders' perceptions of caring for this study was the Caring Behaviors Inventory for Elders (CBI-E) (Wolf et al., 2006). Items on the CBI-E were based on the Caring Behaviors Inventory (CBI) (Wolf, 1986) which is the second empirical instrument developed to measure caring. The CBI (Wolf, 1986) was developed, tested and refined in previous studies, and revised in 1994. It was derived from caring literature in general and framed by Watson's Transpersonal Caring Theory. It provided supportive evidence for empirical validation of Watson's Transpersonal Caring Theory (Watson, 2002).

The CBI-E (Wolf et al., 2006) is the only instrument to measure elders' perceptions of nurse caring, therefore its use for this study was appropriate. The instrument was developed with elders in mind to measure both nurses' and elders' perceptions of nurse caring. The instrument has two parts, one for nurses' perceptions, and another for elders' perceptions. For the purpose of this study, the part of the instrument related to elders' perceptions of nurse caring was used since nurses' perceptions of their own caring behaviors were not being studied.

Early in its development, Wolf et al. (2006) tested the instrument using a convenience sample of elders ( $n = 215$ ) who resided in assisted living facilities, independent living agencies, and adult day care centers in urban and suburban settings. The mean age of elders was 80.87, with an age range = 56 to 97,  $SD = 8.79$ .

The CBI-E is criterion-referenced and measures nurse caring as it is perceived by the individual answering the items. The score received is not compared to other individuals from a sample of similar characteristics taking the same measure. In a criterion-

referenced instrument, the individual's score is calculated by the pre-determined set of criteria on the instrument (Waltz et al., 2005). This is reflected in the CBI-E.

The CBI-E (Wolf et al., 2006) measures perceptions of the nurse caring process reported by elderly people. The 28-item, three-point Likert-like scale (1 = rarely, 2 = sometimes, 3 = often) yields a total score range from 28 to 84. Higher scores indicate that elders perceive more nurse caring behaviors. The CBI-E is self-administered. Since functional changes that occur in the elderly can slow their ability to complete tasks (Friedrick, 2001; Touhy & Jett, 2010), Wolf et al. (2006) reduced the Likert scale from 6 points to 3 points to accommodate this age-related change. The CBI-E was printed using Times New Roman type style, 14-font type size, and sufficient open space. The overall instrument, including directions, individual items, and demographic profile has a readability level of 4.5 according to the Flesch-Kincaid grade level (Wolf et al., 2006). This low readability level accommodated individuals with lower education levels.

Wolf et al. (2006) reported that the maximum amount of time that elders took to complete the instrument was 30 minutes, but there was some variability in the time it took to complete the instrument. This could be explained by differences in elders' functional abilities. Complex tasks such as completing an instrument might be done in a slow and careful manner by elders with functional limitations. A lengthy instrument that required more time to complete could be an issue with elder subjects. Bernside et al. (1998) posited that elders tire easily and fatigue should be a consideration when choosing instruments for elder subjects. They also reported that the research has to be important for elders in order to expend the energy. The CBI-E uses short sentences and a Likert scale of three choices to minimize the energy needed to complete the instrument.

In addition to being developed from the CBI items, CBI-E items were also developed from related literature and research on nurse caring from patients' and nurses' perspectives as well as expert review. Construct validity of the CBI-E was supported. Six experts in gerontologic nursing reviewed the CBI-E and rated the items, directions, length, and other critical points. Three of the experts were doctorally prepared. Two were geriatric nurse practitioners, three were clinical nurse specialists, one was a long-term care administrator, and one was a psychiatric-mental health clinician. Items were revised based on expert review and one item was eliminated from the draft. The content validity or relevance of each item on the CBI-E was rated using the following 4-point rating scale "1=not relevant to 4 = very relevant and succinct." This was done to 29 items, where one item was eliminated because of a low mean. Experts commented on nebulous wording on some items and the excellence of many items. Specific item revisions were offered and the investigators modified several items according to their input. The final number of items was 28 (Wolf et al., 2006).

There was no statistically significant difference in the total scores of the summed responses of elders between the ages of 70 to 79 and 80 to 94 when construct validity of the groups was tested. This could support the generalizability of the instrument which means that the instrument could be applicable to all elders not just a specific age range within the elderly.

Construct validity of the convergent, factorial, and contrasted-groups types was established (Wolf et al., 2006). Convergence means that evidence from different sources was gathered in different ways that all indicate the same or similar meaning of the construct (Kerlinger & Lee, 2000). A factor analysis was done to test for construct

validity of the combined sample. A factor is a construct, a hypothetical entity, a latent variable that is assumed to be the underpinning of the instrument. There are a number of factors that underlie caring, including attentive listening, attending to needs, and providing comfort. The factor analysis was done using exploratory principal components analysis with Varimax rotation for the CBI-E. Those items with loadings greater than .40 were used to identify factor content. All items met the minimum loading criteria for inclusion in a factor. Emerging factors were evaluated on the basis of eigenvalues greater than 1 on the scree plot. The scree plot confirmed a five-factor solution that explained a cumulative 61.90% of the variance. Five factors with eigenvalues greater than 1 were extracted initially and subsequently. The five factors were named by investigators: Factor I, Attending to Individual Needs included 15 items; Factor II, Showing Respect (4 items); Factor III, Practicing Knowledgeably and Skillfully (4 items); Factor IV, Respecting Autonomy (4 items); and Factor V, Supporting Religious/Spiritual Needs (1 item). Items 19, 11, 9, 7 and 2 loaded on two factors and were retained in Factor I. Item 16 loaded on two factors and was retained in Factor II; Item 3 loaded on two factors and was retained in Factor IV. Factor V is item 6. Communalities for all items, with the exception of item 17 (.464), exceeded .50 at an acceptable level of explanation (Wolf et al., 2006).

Wolf et al. (2006) described the process for factor analysis accurately and justified the dimensions of the conceptual framework of caring in the instrument CBI-E, therefore there is a strong correspondence of the CBI-E and the construct of caring. Communalities for all items, with the exception of item 17 (.464), exceeded .50. It is usual that .30 is the minimum that will be considered (Waltz et al., 2005). The factor analysis strengthens the construct validity of the instrument. SPSS for windows version 12.0 was used to analyze



data on CBI-E responses during the second phase of instrument development. Descriptive statistics on the amount of time in minutes spent answering the instrument, item statistics for elder and nursing subjects and combined sample and total CBI-E scores for elder and nursing staff subjects were done and reported.

A pilot study was done on 46 elderly subjects who dwelled at home or in independent living facilities. Cronbach's internal consistency reliability coefficient was .94 for the overall CBI-E (Wolf et al., 2006). Test-retest reliability was established with 16 elder subjects self-administering the CBI-E initially and 30 minutes later. Results demonstrated stability using a 30-minute time interval ( $t = -0.322$ ,  $df = 15$ ,  $p = 0.752$ ). A Wilcoxon Signed Ranks Test was also calculated ( $Z = 1.285$ ,  $p = .775$ ), revealing no statistically significant difference between the first and second testing (Wolf et al., 2006).

Construct validity of the convergent type was tested using the CBI-E and Cronin and Harrison's Caring Behaviors assessment, a 62-item instrument (Baldursdottir & Jonsdottir, 2002; Cronin & Harrison, 1988). Authors' (Cronin & Harrison) permission for use of the scale was obtained. Fourteen senior citizens who resided in an independent residence participated. There was a moderately strong, non-significant correlation ( $r = .50$ ,  $p = .06$ ) calculated between the total scores of the CBI-E and the CBA. Additional testing is necessary to confirm convergent validity using a larger sample (Wolf et al., 2006). There should be significance because the CBI-E and the CBA instruments are based on Watson's carative factors. A side-by-side table, where Watson's carative factors and Swanson's caring processes are compared, showed strong theoretical consistency and construct (content, theoretical) validity (Wolf et al., 2006).

### **Scoring the CBI-E**

The CBI-E is a Likert Scale composed of 28 nurse caring behaviors. Total scores for the 28-item scale may range from 28 to 84. The Likert-like scale was coded in SPSS as 1 (*never*), 2 (*sometimes*), and 3 (*always*). Higher scores indicate that elders perceive more nurse caring behaviors (Wolf et al., 2006). A total score of 28 would indicate that elders never experienced nurse caring behaviors. A total score of 56 would indicate that elders sometimes experienced nurse caring behaviors. A total score of 84 would indicate that elders always experienced nurse caring behaviors. A score in the range of 56 to 84 would indicate that elders experienced caring behaviors more than just sometimes. Scores closest to 84 would indicate that elders experienced high levels of nurse caring behaviors on a 28-item instrument.

### *Patient Satisfaction Scale (PSS)*

The Patient Satisfaction Scale (PSS) was developed by H. Suzie Kim (1983) as part of a research project related to collaborative decision-making. Its original intent was to “gather patient views about nursing care, comparing satisfaction under different nursing regimens or as an outcome for particular nursing interventions” (Suhonen, Leino-Kilpi, Valimaki, & Kim, 2007, p. 33). The initial PSS, put forth in an unpublished manuscript, is no longer available (H. Suzie Kim, personal communication, December 28, 2011). The instrument measures three dimensions of satisfaction: technical and scientific care, provision of information, and interaction and support.

The aim of the PSS is to elicit how a patient feels with regard to needs related to the technical ability of the nurse to give skilled care, the ability and manner in which the nurse communicates needed information, and support, such as being respected, listened

to, and having emotional responses addressed. The PSS was developed to measure nursing accessibility, nurse competency, and how the care led to the patient outcomes. It was originally comprised of nine items which link the three dimensions of technical and scientific care, provision of information and interaction and support. In the original PSS, patients rated each of the nine items on a Likert-type scale. Scores on the nine items were summed in order to arrive at single patient satisfaction score (Suhonen et al., 2007). In the original 9-item instrument, a score of 27 or higher indicated the subject was satisfied with care. A score of 26 or lower indicated that the subject was dissatisfied with care.

Suhonen et al. (2007) were the first researchers to evaluate the psychometric properties of the PSS. They studied the internal consistency, equivalence, stability, validity, and feasibility of the PSS from the American English original version to develop the Finnish adaptation (PSS-Fin) of the Patient Satisfaction Scale. Forward-backward translation procedures and pilot testing were done for the PSS-Fin development (Suhonen et al., 2007). Jones and Kay (1992) noted that the most common and highly recommended process for translating an instrument from the source language to the desired language is called back translation. In back translation two interpreters are used. One translates the first half into the desired language, the other the second half, then the interpreters switch positions and translate the words of one another back into English (Jones & Kay, 1992). Translation procedures are important in order to retain the cultural and linguistic equivalent of the original instrument (Beck, Bernal, & Froman, (2003).

As a result of the back translation, one item from the original instrument regarding the ways nurses prepared the patient for the hospital stay and discharge was separated into two items for the PSS-Fin making the instrument 10 items instead of 9. The answer

format of the PSS-Fin and its original is a 4-point Likert-type scale (1 = very dissatisfied, 2 = dissatisfied, 3 = satisfied, 4 = very satisfied). The PSS-Fin produces one score for the scale. The higher the score, the more satisfied the patient (Suhonen et al., 2007). Using the 10-item Likert-scale, scores of 30 or higher indicated satisfaction with care. Scores of 29 and below indicated dissatisfaction with care. There were no psychometric studies done when the PSS was initially developed (H. S. Kim, personal communication, December 28, 2011). The initial psychometric evaluation of the PSS-Fin was conducted in a pilot study done where the Cronbach's alpha coefficient ranged from 0.77 to 0.79 for the subscales. These are reported in Finnish (Suhonen et al., 2007).

Suhonen et al. (2007) studied the psychometric properties of the PSS-Fin from the data set of 454 surgical patients upon discharge from one hospital district in Southern Finland between October and December 2001. The hospital district was comprised of three hospitals with eight surgical wards: one central hospital (orthopedic, gastrosurgical/urological, short-stay surgery, and day surgery wards) and two regional hospitals (orthopedic and trauma, gastrosurgical, general surgery, and day surgery wards). The inclusion criteria for the study were: 1) discharged home from the hospital during the data collection period; 2) discharged from a surgical ward treating adult patients; and 3) able to complete the questionnaire independently. A nurse distributed the questionnaire to patients who met the inclusion criteria. Patients were asked to complete the questionnaire at the hospital after being given the discharge date but before leaving the hospital. The completed questionnaires were placed in an envelope, which was sealed and deposited in special boxes placed in the wards. A minimum of 140 completed questionnaires was needed from each hospital for a between-hospital comparison ( $\alpha =$

0.01, power 90%). A total of 500 patients were given a questionnaire of which 454 were returned (response rate 91%). Response rates per hospital ranged between 89 and 100%. The age of the respondents ranged from 16 to 91 years with a mean age of  $51.7 \pm 16.9$  years), 56% were female (Suhonen et al., 2007).

The Kolmogorov-Smirnov test was used to evaluate the normal distribution of the sample. Since the assumption of normal distribution was not supported, non-parametric tests were used to analyze the data. A variety of statistical procedures were used for the psychometric evaluation of the PSS-Fin (Suhonen et al., 2007). Discussion of the PSS-Fin psychometric properties follows.

Cronbach's alpha coefficient was calculated to determine internal consistency for the total instrument and all three subscales. A Cronbach's alpha coefficient should reach .70 to .75 to be adequate at the subscale level, but coefficients of .80 and higher are more desirable. A Cronbach's alpha of 0.93 was achieved for the whole 10-item PSS-Fin. For the subscale technical-scientific care needs, the Cronbach's alpha was 0.79; for the subscale information care needs, the Cronbach's alpha was 0.89; and for the interaction/support care needs, the Cronbach's alpha was 0.81 (Suhonen et al., 2007). In the technical-scientific care needs scale, by deleting item "the way the nurses approached me and treated me," the Cronbach's alpha coefficient would have been 0.66 instead of 0.79. Deletion of any item would not increase the alpha coefficient. On the information care-needs scale there is no improvement in Cronbach's alpha coefficient by as much as 0.02 to 0.03 with the deletion of any items in the scale. In the interaction/support care-needs scale by deleting item "the amount of nursing care I received," the alpha coefficient would have been 0.66 instead of 0.81 (Suhonen et al., 2007).

Suhonen et al. (2007) evaluated the correlation matrix to see how a particular item related to the other items. The inter-item correlations showed that all of the items had correlations higher than 0.30. Two items in the information care-needs sub-scale were identified as problematic, showing inter-item correlations of 0.72 and 0.73 with one another. Munro (2005) asserted that it is common to look for correlations with other variables between 0.30 and 0.70. The average inter-item correlations derived from the correlation matrix ranged from 0.56 to 0.62 (technical-scientific), from 0.63 to 0.73 (informational) and from 0.59 to 0.60 (interaction/support). The corrected item to total correlations ranged from 0.60 to 0.77 for the items in the PSS-Fin. The target correlation of item with the scale score total should be a minimum of 0.40 (Suhonen et al., 2007).

The Spearman's rho was used to examine the stability and equivalence of the items on the PSS-Fin in a two-week test-retest. Correlation coefficients (Spearman rho) were computed between the subscales of the PSS-Fin (technical-scientific, information and interaction/support) to determine the existence, type and strength of the associations between the subscales and to establish whether the relationships were significant at the 0.05 level (Suhonen et al, 2007).

Equivalence and discriminative ability were evaluated by administering the PSS-Fin to a sample of hospital patients discharged home from hospital between June 19 and August 15, 2001. A total of 100 patients received a questionnaire at the hospital, and 89 returned the PSS-Fin. After 2 weeks, the same patients answered and returned the completed questionnaire again ( $n = 43$ ). About half of the respondents, who answered twice, were women (52%, mean age =  $53 \pm 18$  years). A 2-week test-retest with Spearman's rho correlation coefficient was moderate ( $r = 0.679, p < 0.0001$ ) (Suhonen et

al., 2007).

The data derived from the discharged patients were used to evaluate the equivalence of the PSS-Fin by administering it simultaneously with another patient satisfaction instrument, the Patient Judgment of Hospital Quality (PJHQ) questionnaire. The PSS-Fin had moderate equivalence with the PJHQ (Spearman's  $\rho = 0.750$ ,  $p < 0.0001$ ) (Suhonen et al., 2007).

Construct validity was determined with Spearman's  $\rho$  correlation to examine the relationships between sub-scales and the total PSS-Fin. The sub-scale technical-scientific care needs was significantly correlated with the total PSS-Fin (Spearman's  $\rho = 0.915$ ,  $p < 0.001$ ,  $n = 432$ ), as well as the sub-scale informational care-needs (Spearman's  $\rho = 0.935$ ,  $p < 0.001$ ,  $n = 432$ ), and the sub-scale interaction/support care-needs (Spearman's  $\rho = 0.894$ ,  $p < 0.001$ ,  $n = 433$ ) (Suhonen et al., 2007).

A variety of factor analysis solutions were calculated to evaluate the structure of the PSS-Fin. An exploratory factor analysis using Principal Component Analysis (PCA) was computed. The PCA is a technique used that analyzes *all* variance in the observed variables, not just common factor variance (Polit, 2010). This supported a one-factor solution where all items generate a unidimensional structure for the PSS-Fin. Next a PCA (orthogonal rotation Varimax with Kaiser normalization) was employed. Orthogonal rotation results in factors that are uncorrelated with one another, the most common being the Varimax rotation. The goal of Varimax rotation is to maximize the variance of the loadings within factors, across variables. The Varimax method strives to minimize the number of variables that have high loadings on more than one factor to facilitate interpretation (Polit, 2010). In the PSS-Fin, communalities ranged from 0.69 to 0.83 and

the solution accounted for 76.6% of the variance. Conceptual interpretability was used to determine the number of meaningful factors to be extracted. A forced three-factor solution was computed because the PSS-Fin has three sub-scales, and the general criteria for factor extraction (the Kaiser's criterion of an eigenvalue rounding of 1 or greater, examination of the scree plot figure, and a minimum of 5% variance per component) were reached (Suhonen et al., 2007).

The three hypothesized sub-scales were correlated so a forced three-factor solution with Promax (oblique rotation was also generated with correlations at a level of 0.68 to 0.83) which is acceptable. A PCA with Promax rotation is highly effective because the model clusters together subset of highly inter-correlated variables. The three-factor solution accounted for 76.59% of the variance regardless of the rotation method (Suhonen et al., 2007).

The items were evaluated based on the two criteria for the rotated solution, that is, the coefficients are equal to or larger than 0.30, which means there is a significant loading on a factor and a difference between factor loadings on an item at 0.20 or greater. Only four of the individual items had the highest loading on its conceptualized factor and three of these had a difference of 0.20 between loadings. Six items loaded highly to two or more factors. Suhonen et al. (2007) noted that this is difficult to interpret.

Multiple regression analysis was computed to evaluate the strength of the domains in explaining the measured concept separately. The model was found to be statistically significant ( $F = 466104.8$ ,  $df = 3$ ,  $p < 0.0001$ ). The model has three statistically significant predictors. The technical-scientific ( $t = 174.9$ ,  $p < 0.0001$ ), information ( $t = 258.9$ ,  $p < 0.0001$  and interaction/support care needs ( $t = 219.6$ ,  $p < 0.0001$ ) which



explained 100% of the dependent variable changes. Informational care-needs was the most significant predictor of patient satisfaction. The tolerance values of the model ranged from 0.23 to 0.33. Tolerance values may range from 0.00 to 1.00 and tolerance values of 0.1 or less indicate problems with multi-collinearity (Suhonen et al., 2007).

Tolerance values are computed by treating each predictor as the dependent variable in a multiple regression analysis, and determining the  $R^2$ , when the other independent variables are used as predictors. Tolerance is 1 minus this  $R^2$  value. If a predictor variable was totally uncorrelated with other independent variables, tolerance would be 1.00. Tolerance would be .00 if the predictor variables were perfectly intercorrelated. Tolerance is usually between .00 and 1.00, with higher values being more desirable (Polit, 2010).

Multicollinearity can occur in multiple regression analysis when the independent variables are too highly intercorrelated. Multicollinearity should be avoided because if the independent variables are highly correlated they will add little new information to the regression when used in combination. Multicollinearity makes the regression result unstable and makes it difficult to reject the null hypothesis (Polit, 2010). In the PSS-Fin, the variance inflation factor (VIF), defined as the reciprocal of tolerance (i.e.,  $1 \div \text{tolerance}$ ) of predictors ranged from 3.0 to 4.3. The VIF indicates the strength of the linear association between the predictor and all other remaining predictors. Multicollinearity is a concern when the VIF exceeds 10 (Suhonen et al., 2007).

The feasibility of the PSS-Finn was determined. It had a low missing data of 10% with the normal range being 4.8 to 10.1%. The questionnaire takes about 5 minutes to complete. The documented response rate is 97% (Suhonen et al., 2007).

The PSS English Version is being used in this study because it includes the salient dimensions of patient satisfaction that have been identified in the literature. The dimensions of technical and scientific care, provision of information, and interaction and support parallel the dimensions of patient satisfaction described in the literature. The first item under the dimension of *Provision of Information* contains two measures. It is stated as follows: “The way nurses explained things to me and prepared me for my stay at the hospital and for my discharge.” These two phrases were separated to read, “The way nurses explained things to me and prepared me for my stay at the hospital,” and “The way nurses prepared me for my discharge.” These two nursing behaviors will be measured separately. Suhoen et al. (2007) used the same wording.

The 10 question PSS takes five minutes to complete. Burnside, Preski, and Hertz (1998) asserted that the needs of older adults should be considered when selecting research instruments in the study of elders. Fatigue is an important consideration in instrument selection. Since two instruments are being used in this study, it was important that the instruments were not lengthy and would not be taxing for elder subjects. Print should be large and blue paper is recommended to eliminate glare. Instruments for this study followed this recommendation and were copied on blue paper with 14-point font.

Palese et al. (2011), studied the correlation between caring and patient satisfaction, the differences across countries on the correlation between caring as perceived by patients, and patient satisfaction, and the affect of caring behaviors on patient satisfaction using the Patient Satisfaction Scale (PSS) and the Caring Behaviors Inventory (CBI). There was a positive correlation between the CBI and the PSS ( $r = 0.66, p < .01$ ).

### **Scoring the PSS**

The PSS is a Likert scale composed of 10 statements. Subjects marked their choice of *very dissatisfied*, *dissatisfied*, *satisfied*, or *very satisfied* to each of the 10 statements that were divided into three sub-scales: *Technical and Scientific Care*, *Provision of Information*, and *Interaction and Support*. In SPSS, *very dissatisfied* was coded 1, *dissatisfied* was coded 2, *satisfied* was coded 3, and *very satisfied* was coded 4. The total score for the PSS may range from 10 to 40 for the 10-item scale.

#### Katz Index of Independence in Activities of Daily Living (Katz ADL)

Wallace and Shelkey (2007) noted that the Katz Index of Independence in ADL (Katz ADL) is the most appropriate instrument to assess functional status of a client's ability to perform ADL independently.

The Katz ADL was initially developed to study the outcomes of treatment and prognosis in the elderly and chronically ill on the activities of feeding, bathing, dressing, toileting, continence, and transferring (Katz et al., 1963). Earlier versions of the Katz ADL allowed for gradual stages of scoring from a range of A (*independence in six ADLs*), B (*independence in all but one ADL*), and so on, with G (*dependence in all ADLs*) (Katz, Down, Cash, and Grotz, 1970). Guralnik, Branch, Cummings, and Curb (1989) found that without detailed guidelines for interviewers to report levels of disability, it was difficult to evaluate functional status using multiple levels of response categories. This led to the dichotomous scoring of the current Katz ADL.

Katz et al. (1963) reported correlations of 0.95 to 0.98 through test and retest demonstrating stability of the scale in patients with impaired function. Brorsson and Asberg (1984) analyzed the construct validity of the Katz ADL Index using the scale-analysis technique. Since scale measures can vary through measurement errors and

random variations among individuals who use the scale, the conventional level of acceptable errors is measured by the coefficient of reproducibility, which gives the ratio of successful reproductions to total responses made on the assumption of perfect scalability. A reproducibility of 0.90 confirms the existence of a valid cumulative and unidimensional Guttman scale. However Brorsson and Asberg (1984) found that the distribution of the items was skewed and used the coefficient of scalability (C of S) suggested by Menzel (1953). Menzel suggested a level of .60 or higher as indicating a valid Guttman Scale. Using this method Brorsson and Asberg found the coefficient of scalability to be 0.74 to 0.88, which was well above the lower acceptance limit of .60 suggested by Menzel. They determined the Katz ADL Index to be reliable.

Ciesla, Shi, Stoskopf, and Samuals (1993) tested the reliability of a five-item, dichotomous ADL instrument adapted from the Katz Index (1963) as it was originally named. Data were collected using a self-report telephone interview. A random sample of 6,472 South Carolina residents age 55 years and older were selected statewide. The activity of continence was omitted to reflect more recent usage of the ADL scale (Rowland, 1989). The scale consisted of five items: feeding, dressing, bathing, using toilet, and transferring. Ciesla et al. (1993) conducted an exploratory factor analysis on the five-item ADL scale to determine the underlying dimensionality or relationship between variables that make up the scale. The exploratory factor analysis of the ADL data showed a single factor underlying structure. Based on principal components methods, the factor had an eigenvalue greater than 1 (3.40) accounting for an accumulated total of 67.1% of the variance. All of the behavior components loaded on the factor with a correlation of .50 or greater. The solution extracted only one factor so the

solution was not rotated. None of the items involved an identical level of difficulty, which indicates that the scale does not discriminate between items. The items in this ADL scale meet the Guttman standard for a hierarchical scale. The Guttman analysis is a means of analyzing the underlying operating characteristics of items in a scale in order to determine if their interrelationship is unidimensional and cumulative. The coefficient of reproducibility is above .9 and the coefficient of scalability score is greater than .60, therefore the five-item scale was found to be unidimensional and cumulative (Ciesla et al., 1993).

To determine the reliability of scales composed of dichotomously scored items such as the ADL scale used here, a special form of Cronbach's alpha called the Kuder-Richardson 20 (KR-20) was used. The KR-20 is an estimate of the expected correlation between one test and a hypothetical alternative test that has the same number of items. The KR-20 is frequently used with Guttman's analysis as a further indicator of reliability. Ciesla et al (1993) reported an internal consistency reliability of .87. This alpha coefficient was sufficiently high to justify use of the five-item ADL components as an index or scale (Ciesla et al., 1993).

A Mokken's scale analysis (Mokken & Lewis 1982) was calculated for the five-item ADL scale. In Mokken's analysis the graphic representation of the probability of a positive response to an item as a function of the latent trait must increase monotonically. Also the graphic representation of items in the scale do not necessarily have to intersect. All items should involve different degrees of difficulty that determine the hierarchical structure (Ciesla et al., 1993).

The Spearman's coefficient of rank-order correlation was calculated for the five-item

scale. The  $R_s$  was .90. A coefficient of over .70 demonstrates acceptable reliability.

Brorsson and Ashberg (1984) reported a satisfactory coefficient of scalability, a measure of construct validity, of 0.74 to 0.88.

As a result of this study proposal, the six-item Katz ADL Index was used. The Katz ADL assessment sheet was added to the nursing assessment in the hospital where the study was conducted. Patients' Katz ADL scores were assessed upon admission and on a daily basis including the day of discharge by the primary nurse assigned to care for the patient. Interrater reliability was measured by assessing eighteen patients, nine from each unit (10% of the subjects) for assessment of functional status to determine that the ADL assessments made by the nurses were accurate. Sixteen of the 18 patients were recorded accurately. Interrater reliability is a percentage of agreement between two observers (LoBiondo-Wood & Haber, 2006). The interrater reliability for this study was .89.

Subjects received a score of "1" for each of the six activities of daily living done independently, that is with no supervision, direction, or personal assistance, or a score of "0" if the ADL was done with supervision, direction, assistance or total care. Total Katz ADL scores could range from "0" to "6." A total score of "6" meant high patient independence. A score of "0" meant total dependency. The subject's admission score was compared to the discharge score to see if ADLs were compromised by hospitalization. A decrease in Katz ADL score was treated as a negative outcome. Therefore, if the subject was admitted with a score of "6" (all ADLs) intact, but upon discharge received a score of "5" or less, the subject was recorded as having a decline in functional status.

#### Procedure for Data Collection

The study was initiated at the end of October 2012 after IRB approval was obtained

from the hospital system and Rutgers University. Subjects were selected from the daily inpatient census of the ACE unit and the Telemetry unit in collaboration with the primary nurses and unit secretaries to choose the patients who met the study criteria. The criteria for inclusion in the study were limited to elders who

- were 70 years of age and older;
- had intact cognitive ability and were able to complete two surveys as determined by the primary nurse;
- did not experience acute delirium during their hospitalization;
- were able to see, speak, and hear;
- were scheduled to be discharged; and
- agreed to answer the CBI-E and the PSS surveys.

In addition, subjects with the same medical diagnoses were recruited from each unit, matching subjects as closely as possible to lessen the confounding influence of severity of medical diagnoses on study results. If the patient met the study criteria, the researcher visited the patient, explained her status as a doctoral candidate from Rutgers University College of Nursing, and asked the patient for permission to explain the conduct and purpose of the study. Before proceeding with the explanation, the researcher assessed that the subject was comfortable, pain free, and all basic needs had been met. Once the session began, emphasis was placed on the importance of the study for improving the care of acutely ill hospitalized elders. The nurse researcher explained that there were two surveys: one was to give us information about their perceptions of the caring behaviors of nurses (CBI-E), and the other to give us information about how satisfied they were with nursing care (PSS). The Likert scale of both instruments was explained. Subjects were

told that the surveys were a total of 5 pages, large print, and short statements, and if they had any difficulty completing the survey that they could stop and withdraw from participating. If the patient agreed, the nurse researcher explained that there was a consent form that needed to be signed that explained in detail the conduct of the study. Upon the subject's agreement to take part in the study, the consent form and surveys were left with the subject and was told the researcher would check back in about 15 to 30 minutes to answer any questions and retrieve the consent form and surveys. Subjects were reminded that participation was voluntary and that there was no obligation.

Some elders read and signed the consent form and agreed to participate in the study, but 10 out of 40 patients (25%) of elders who were asked said they did not wish to read or sign a consent form to merely fill out a survey. They verbalized that they did not want their names on a survey, and that they did not wish to read 11 pages of print on the day they were being discharged. Data collection was stunted because of the mandated consent form.

The nurse researcher returned to the hospital system and Rutgers IRBs with a proposal to eliminate the signed consent form and obtain assent. With assent, the subject was given an information sheet about the study, and survey completion was the consent. This change was approved. Data collection resumed and continued until 90 subjects from each unit, 180 total subjects were obtained to complete the surveys. Fifteen additional patients who met the study criteria refused participation.

Data for the variable of functional status was gathered by reviewing each subject's medical record. The nursing staff on the ACE and Telemetry units used the Katz ADL upon admission and daily to assess patients' functional status. Demographic data,



including age, gender, ethnicity, marital status, religion, and education of the subjects were obtained and on the first page of the surveys.

### Human Subjects Protection

Conducting research at the health system where the study was conducted required the submission of a proposal and application to the Nursing Research Council. The Nursing Research Council made a recommendation to the Institutional Review Board (IRB) at the health system for the study to be approved. The proposal was also submitted to the Rutgers University IRB for approval. The study met the criteria for expedited review because it was a non-experimental study, whereby three instruments were used and involved minimal risk to human subjects. The subjects completed two of the three instruments, and the Katz Index of ADL data were retrieved by chart review for the admission and discharge Katz ADL assessments. The study met the category of . . . *research using a survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies* (Rutgers University, 2011).

Expedited review was sought and obtained from both IRBs to whom the study was submitted for review. The initial IRB approvals required the subjects to read and sign the 6- page consent form required by the hospital system. This was later changed to Assent to protect subjects' anonymity and participation fatigue.

## Chapter 4

### Analysis of Data

#### Statistical Description of the Variables

This chapter is a discussion of the statistical description of the demographic variables and the respondent total scores. An analysis of the psychometric properties of the

instruments used in the study, the statistical analysis used to test the seven hypotheses, and the additional findings of the study with statistical analyses will be presented.

### **Sample Demographic Variables**

Data were analyzed with SPSS version 21. The demographic of age was measured on an interval level scale. The variables of sex and ethnicity were measured using nominal scales. Education was measured on an ordinal level scale. The sample ( $N = 180$ ) was between the ages of 70-99, with a mean age of 80, predominantly female, Caucasian, Catholic, and married. The most frequent level of education was high school graduate and some college, with a range of 1<sup>st</sup> to 5<sup>th</sup> grade education to doctoral degree. Tables 1 through 3 present descriptive data.

Table 1

#### Sample Characteristics (*Age*)

Variable	n	%	Mean	SD	Range	Skew	Kurtosis
Age	180	100	80.55	7.041	70-99	.371	-.450
	ACE Unit		Telemetry Unit		Total Sample		
	n	%	n	%	n	%	
70-74	27	30	16	17.8	43	23.9	
75-79	15	16.7	20	22.2	35	19.4	
80-84	25	50	25	50.0	50	27.8	
85-89	18	20	15	16.7	33	18.3	
90-94	4	4.4	8	8.9	12	6.7	
95-99	1	1.1	6	6.7	7	4.0	

#### Sample characteristics (*Medical Diagnoses*)

The most frequent medical diagnosis of the total sample was cardiac disease, followed by respiratory and gastrointestinal diseases. The most frequent medical diagnosis of the ACE unit respondents was respiratory disease; the most frequent medical diagnosis of the Telemetry unit respondents was cardiac disease. The frequencies and percentages of

subjects' medical diagnoses are listed in Table 4.

Table 2

Sample Characteristics (*Gender, Ethnicity, Religion, and Marital Status*)

Variable	n	%
Gender		
Male	77	42.8
Female	103	57.2
Ethnicity		
African-American	1	.6
Asian	1	.6
Caucasian	176	97.8
Latino	1	.6
Other	1	.6
Religion		
Catholic	120	66.7
Jewish	4	2.2
Protestant	41	22.8
Other	15	8.3
Marital Status		
Married	80	44.
Single	10	5.6
Separated	3	1.7
Divorced	13	7.2
Widowed	73	40.6
Partnered	1	.6

Table 3

Sample Characteristics (*Education*)

Variable	n	%
Education		
Grade 1-5	1	.6
Grade 6-8	10	5.6
Grade 9-12	22	12.2
HS graduate	53	29.4
Some college	53	29.4
Associates	6	3.3
Bachelors	27	15
Master's	5	2.8
Doctorate	1	.6
Missing	2	1.1

Table 4

Sample Characteristics (Medical Diagnoses)

Diagnosis	ACE Unit		Telemetry Unit		Total	
	n	%	n	%		
Cardiac	10	11.1	43	47.8	53	29.4
Respiratory	23	25.6	14	15.6	37	20.6
Gastrointestinal	21	23.3	7	7.8	28	15.6
Syncope	2	2.2	11	12.2	13	7.2
Skin Infection	8	8.9	1	1.1	9	5
Musculoskeletal	1	1.1	6	6.7	7	3.9
Anemia	5	5.6	0	0	5	2.8
Malaise	2	2.2	1	1.1	3	1.7
Vascular	2	2.2	1	1.1	3	1.7
DMII	1	1.1	0	0	1	.6
UTI	8	8.9	4	4.4	12	6.7
Kidney	7	7.8	2	2.2	9	5

Instrument Total Scores and Descriptive Statistics

Descriptive statistics for respondent scores are presented in Table 5. Total scores derived from the Caring Behaviors Inventory for Elders (CBI-E), Patient Satisfaction Scale (PSS) and Katz ADL Index were not normally distributed.

Table 5

Instrument Total Scores and Descriptive Statistics

Variable	N	Mean	SD	Minimum	Maximum	Skew	Kurtosis
Summed CBI-E	180	72.07	6.78	39	78	-1.59	3.07
Summed PSS	180	28.26	4.52	8	32	-1.56	3.30

Psychometric Properties of Instruments used in the Study**Caring Behaviors Inventory for Elders (CBI-E)**

The CBI-E was originally developed for elders who reside in Assisted Living and independent living facilities. Its use in the acute care setting was not previously documented. In this study, the 28-item CBI-E was administered. Subjects marked *never*,

*sometimes* or *always* according to the frequency with which they experienced each nurse caring behavior. Some subjects in this study discussed their difficulty selecting answers to two items, and marked these items N/A or did not answer them. Two items with the highest missing data were CBI-E 3, *Helping you and your family make decisions*, and CBI-E 6, *Assisting you to meet your religious or spiritual needs*. An analysis of missing data identified that each of these variables had 10 counts (5.6%) of missing data. Subjects who did not answer CBI-E 3 reported that they did not expect nurses to help them make decisions, as this was the role of family members. Subjects who chose not to answer CBI-E 6 said they did not wish to have their religious or spiritual needs met, or said that a chaplain came in to visit from their parish every day. They shared that it was not the nurse who facilitated this. Some respondents said that this item did not apply to them, or these items did not reflect caring on the part of the nurse. These two items were removed from the analysis with the agreement of the instrument developer (Zane Wolf, personal communication, October 1, 2013); therefore in this study the summed score was based upon 26 items, two less than the original 28-item instrument. Polit (2010) stated that throwing out a variable (item) is better than eliminating cases, especially if it is a minor variable. In addition to these two items, 14 additional items had missing data from 1 (.6%) to 8 (4.4%) cases. These missing values were replaced with the mean of other relevant variables from the subject with the missing value. Polit (2010) validated this approach with the assumption that individuals usually demonstrate consistency when answering questions on topics that are similar, and uses person-specific information to estimate the value. This method has the advantage of not throwing out data altogether by list-wise case deletion. The Cronbach's alpha for the 28-item CBI-E with missing data

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was 0.909. The Cronbach's alpha for the 26-item scale was 0.918.

### **Scoring the CBI-E**

The CBI-E Likert-like scale was coded in SPSS 21 as 1 (*never*), 2 (*sometimes*), and 3 (*always*). Total scores were recalculated to adjust for the items that were removed. The scoring was based on a 26-item instrument instead of a 28-item instrument. The revised total score range was 26 to 78. Higher scores indicated that elders perceive more nurse caring behaviors (Wolf et al., 2006). A total score of 26 would indicate that elders never experienced nurse caring behaviors. A total score of 52 would indicate that elders sometimes experienced nurse caring behaviors. A total score of 78 would indicate that elders always experienced nurse caring behaviors. A score in the range of 52 to 78 would indicate that elders experienced caring behaviors more than just sometimes. Scores closest to 78 would indicate that elders experienced high levels of nurse caring behaviors. In this study, the summed CBI-E score was ( $M=72.07$ ,  $SD = 6.78$ ). This score indicated that the total population of subjects (elders) ( $N = 180$ ) perceived high levels of caring. The total scores and descriptive statistics of the CBI-E are presented in Table 5.

### **Patient Satisfaction Scale (PSS)**

In this study, the 10 item PSS was administered. Subjects marked their choice of *very dissatisfied*, *dissatisfied*, *satisfied*, or *very satisfied* according to the degree with which they were satisfied with nursing care. The 10 statements were divided into three subscales: *Technical and Scientific Care*, *Provision of Information*, and *Interaction and Support*. As with the CBI-E, subjects expressed difficulty with answering 2 items on the PSS. Item #3, *The choices I had in getting specialized nursing care when I needed it* was missing in 36 (20%) of cases, and item #5, *The ways nurses prepared me for my*

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*discharge* was missing in 13 (7.2%) of cases. Subjects' comments about PSS item #3 were that there was no need for specialized nursing care in the ACE and Telemetry units so they could not make a determination of satisfaction. Subjects' comments about PSS item # 5 were that they did not receive discharge teaching at the point that they were completing the survey therefore they could not make a determination about satisfaction. Discharge teaching in both units was done at the point the patient was dressed, packed, and ready to leave the unit. Surveys were given to subjects at the point a discharge order was written. The removed items were not appropriate for these units. As previously referenced from Polit (2010), these two items were removed from the analysis with the agreement of the instrument developer (H. Suzie Kim, personal communication, September 30, 2013); therefore in this study, the summed score was based upon 8 items two less than the original 10-item instrument. Four other items had missing data with counts from 1 (.6%) to 2 (1.1%). These missing values were replaced with the mean of other relevant items from the subject with the missing value as described above in the discussion of the CBI-E. The Cronbach's alpha for the 10-item scale was 0.962. The Cronbach's alpha for the 8-item scale with PSS 3 and PSS 5 removed was 0.946.

### **Scoring the PSS**

The Likert-like scale was coded in SPSS 21 as 1 (*very dissatisfied*), 2 (*dissatisfied*), 3 (*satisfied*), and 4 (*very satisfied*). Total scores were recalculated to adjust for the items that were removed. The scoring was based on an 8-item instrument instead of a 10-item instrument. The revised total score range was 8 to 32. Scores of 8 to 16 or would have signified that subjects were dissatisfied with nursing care. Scores of 24 and higher would signify satisfaction with nursing care. Scores closest to 32 signify higher levels of elders'

satisfaction with nursing care. In this study, the PSS score for the total subject population ( $N = 180$ ) was ( $M = 28.26$ ,  $SD = 4.52$ ). This indicated elders' experienced high levels of satisfaction with nursing care. The descriptive statistics of the PSS are presented in Table 5.

### KATZ ADL INDEX

The health outcome of functional status was measured using the Katz ADL Index, and was determined by whether a subject experienced decline or no decline. The health outcome of functional status was measured on a nominal scale as *no decline* and *decline*. *No decline* or *decline* was determined by first obtaining the admission and discharge ADL scores from the electronic medical record for each subject. The scores on admission and discharge ranged from 0 to 6 for each unit and were recorded by the staff nurses. *Independent in no ADLs* was recorded as 0; *independent in 1 ADL* was recorded as 1; *independent in 2 ADLs* was recorded as 2; respectively up to *independent in 6 ADLs*, which was recorded as 6. Then the discharge score was subtracted from the admission score to determine if there was a decline or improvement in functional status. A decrease in score from admission to discharge was determined as decline; a score that stayed the same or increased was determined as no decline. In SPSS, no decline was given the code of 0; decline was given the score of 1. No data were missing on the Katz ADL Index. The descriptive statistics are presented on Table 6.

Table 6

Number and Percentage of Subjects Decline and No Decline

Variable	N	Number (%) decline	Number (%) no decline
Functional Status	180	26 (14.4%)	154 (85.6%)



### Hypotheses

Hypothesis 1, *Hospitalized elders' perceptions of nurse caring behaviors are positively related to satisfaction with care* was tested using the Spearman's rho correlation coefficient. The variables hospitalized elders' perceptions of nurse caring behaviors, and satisfaction with nursing care were measured on an ordinal level scale. Correlation coefficients were computed between the individual variables and total scores of the CBI-E and the PSS. The correlation between elders' perceptions of nurse caring behaviors and satisfaction with nursing care scales was significant using the Spearman's rho,  $r(178) = .555, p = .000$ . Hypothesis 1 was supported.

Hypothesis 2, *Hospitalized elders' perceptions of nurse caring behaviors are positively related to the health outcome of functional status* was tested using the Spearman's rho correlation coefficient. The variable hospitalized elders' perceptions of nurse caring behaviors was measured on an ordinal scale. The health outcome of functional status was measured on a nominal scale. The correlation between hospitalized elders' perceptions of nurse caring behaviors and the health outcome of functional status was not significant using the Spearman's rho,  $r(178) = -.007, p = .924$ . Hypothesis 2 was rejected.

Hypothesis 3, *Hospitalized elders will report more nurse caring behaviors on the ACE unit than hospitalized elders on the Telemetry unit*. A Mann-Whitney *U* test was conducted to evaluate if elders on the ACE unit will report higher perceptions of nurse caring than elders on the Telemetry unit. The results of the test were not in the expected direction and were not significant.  $Z = -1.230, p = .219$ . Elders on the ACE unit had an average rank of 85.74, while elders on the Telemetry unit had an average rank of 95.26.

Hospitalized elders cared for on the ACE unit did not report higher perceptions of nurse caring behaviors than elders on the Telemetry unit. Hypothesis 3 was rejected.

Hypothesis 4 *Hospitalized elders will report more care satisfaction on the ACE unit than on the Telemetry unit.* A Mann-Whitney U test was conducted to evaluate if elders will report more satisfaction with nursing care on the ACE unit than elders on the Telemetry unit. The results of the test were not in the expected direction, and were not significant.  $Z = -.315, p = .753$ . Elders on the ACE unit had an average rank of 89.29, while elders on the Telemetry unit had an average rank of 91.71. Hospitalized elders cared for on the ACE unit did not report more satisfaction with care than elders on the Telemetry unit. Hypothesis 4 was rejected.

Hypothesis 5, *Hospitalized elders who were cared for on the ACE unit will show less functional status decline upon discharge than those who were cared for on the Telemetry unit.* A chi-square was conducted to evaluate if there was less decline in functional status from admission to discharge on the ACE unit compared to the Telemetry unit. The variables of decline in functional status and type of unit were measured on a nominal scale. The variable health outcome of functional status was coded as 0 (*no decline in functional status*), or 1 (*decline in functional status*). The variable type of unit was coded as 0 (*ACE unit*), or 1 (*Telemetry unit*). A two-way crosstabulation analysis was conducted to evaluate if there was less functional status decline on the ACE unit than on the Telemetry unit. The number and percentage of subjects decline on each unit is presented on Table 7. The percentage of elders who declined on the ACE unit was slightly higher than the percentage of elders who declined on the Telemetry unit but not significantly. The chi-square analysis indicated no significant association between decline and the type

of unit on which the elder received care Pearson  $\chi^2(1, 179) = .719, p = .396$ . Hypothesis 5 was rejected.

Table 7

Number and Percentage of Subjects with Functional Decline according to Unit

	ACE Unit	Telemetry Unit	Totals
Decline	15(16.7%)	11(12.2%)	26(14.4%)
No Decline	75(83.3%)	79(87.8%)	154(85.6%)

A crosstabulation and chi-square analysis were done to see the actual number and percentage of subjects' level of function per unit upon admission and at discharge, and to determine the level of significance. The crosstabulation analysis is presented on Table 8.

Table 8

Frequencies of Subjects' Katz ADL scores upon Admission and Discharge by Unit

	ACE Unit (N=90)		Telemetry Unit (N=90)	
	Admission	Discharge	Admission	Discharge
Independent in 6 ADLs	35(38.9%)	45(50%)	39(43.3%)	57(63.3%)
Independent in 5 ADLs	2(2.2%)	3(3.3%)	4(4.4%)	6(6.7%)
Independent in 4 ADLs	14(15.6%)	13(14.4%)	13(14.4%)	11(12.2%)
Independent in 3 ADLs	6(6.7%)	4(4.4%)	9(10%)	6(6.7%)
Independent in 2 ADLs	17(18.9%)	8(8.9%)	20(22.2%)	8(8.9%)
Independent in 1 ADL	9(10%)	14(15.6%)	4(4.4%)	2(2.2%)
Independent no ADLs	7(7.8%)	3(3.3%)	1(1.1%)	0(0.0%)

Mean admission and discharge scores were computed according to unit. Table 9 demonstrates that the Katz ADL scores were higher on admission and discharge for subjects who received care on the Telemetry unit. More subjects were admitted and discharged at a higher level of functional status than those on the ACE unit. A chi-square (with Yates Continuity Correction) indicated that there was no significant unit difference

between subjects' admission Katz ADL scores,  $\chi^2(1, N = 180) = .209, p = .225$ , however

Table 9

Katz ADL Mean Functional Status Scores upon Admission and Discharge by Unit

	Type of Unit	N	Mean	SD
Score on admission	ACE	90	3.74	2.13
	Telemetry	90	4.12	1.82
Score on discharge	ACE	90	4.21	2.09
	Telemetry	90	5.02	1.48

there was a significant unit difference between subjects' discharge Katz ADL scores  $\chi^2(1, N = 180) = .277, p = .020$ .

Hypothesis 6, *Type of care unit moderates the relationship between hospitalized elders' perceptions of nurse caring behaviors and satisfaction with care* was tested using multiple regression analysis. A multiple regression analysis was conducted to determine if the interaction of the two variables together: type of unit and nurse caring behaviors, and separately, type of unit and nurse caring behaviors was predictive of elders' satisfaction with care. The variables type of unit and nurse caring behaviors were calculated into an interaction variable. The interaction variable was computed in SPSS by multiplying the total score of nurse caring behaviors by an indicator for type of unit. Three variables: nurse caring behaviors, unit type, and the interaction of unit type and nurse caring behaviors were entered into the regression model on the dependent variable satisfaction with care. The regression model presented in Table 10 was significant  $R^2 = .24$ , adjusted  $R^2 = .229$ ,  $F(3, 176) = 18.737, p = .000$ , explaining 24% of the variance in elders' satisfaction with care, but only with the variable nurse caring behaviors as a significant predictor of elders' satisfaction with care,  $B = .421, p = .013$ . Type of unit was

not a predictor of satisfaction  $B = 1.088, p = .891$ ; and the interaction variable type of unit, and nurse caring behaviors were not predictors of elders' satisfaction with care,  $B = -.020, p = .849$ . Hypothesis 6 was rejected.

Table 10

Interaction of Type of Care Unit and Nurse Caring Behaviors affecting Satisfaction with Nursing Care

$R^2$	adjusted $R^2$	$F$	$df$	$p$
.24	.229	18.737	176	.000

Hypothesis 7, *Type of care unit moderates the relationship between hospitalized elders' perceptions of nurse caring behaviors and the health outcome of functional status* was tested using multiple regression analysis. A logistic regression analysis was conducted to determine if the interaction of the two variables together: type of unit and nurse caring behaviors, and separately, type of unit and nurse caring behaviors was predictive of elders' functional status. Logistic analysis was used because the variable health outcome of functional status was categorical. The variables type of unit and nurse caring behaviors were calculated into an interaction variable. Three variables: nurse caring behaviors, unit type and the interaction of unit type and nurse caring behaviors were entered into the regression model on the dependent variable functional decline. The model was not a predictor of functional status decline,  $\chi^2(3, n = 180) = 1.78, p = .618$ . The *interaction variable* of type of unit and nurse caring behaviors had no significant effect on functional status decline,  $B = .059, p = .335$ . The variable *type of unit* had no significant effect on functional decline,  $B = 4.888, p = .301$ ; and the variable *nurse caring behaviors* had no effect on functional decline,  $B = -.076, p = .392$ . The results are presented in Table 11. Hypothesis 7 was rejected.

Table 11

Interaction of Type of Care Unit and Nurse Caring Behaviors affecting Functional Decline

$\chi^2$	<i>n</i>	<i>df</i>	<i>p</i>
1.78	180	3	.618

Additional Findings

**Elders' Perceptions of Nursing Caring Behaviors and their Satisfaction with Nursing Care**

In the total sample  $N = 180$ , the total scores on the CBI-E and the PSS were high. This supports the study outcome that elders perceived that nurses cared for them, and they were satisfied with the nursing care they received. The CBI-E summed mean score of 72.07 fell close to the maximum score of 78 using the 26-item instrument. A score of 78 would have equated to *always* perceiving nurse caring behaviors. A score of 58 would have equated to *sometimes* perceiving nurse caring behaviors. The score obtained on the CBI-E in this study indicated high levels of perceived nurse caring. Higher scores indicate that elders perceive more nurse caring behaviors (Wolf et al., 2006). The PSS summed mean score of 28.26 fell close to the maximum score of 32 using the 8-item instrument. A score of 32 would have equated to *very satisfied* with nursing care. A score of 24 would have equated to being *satisfied* with care, and a score of 16 or less would have equated to being *dissatisfied* with care. The score of 28.26 fell between *satisfied* and *very satisfied* and demonstrated that elders' reported high levels of satisfaction with nursing care.

**Age, Marital Status and Health Outcome of Functional Status**

Correlations of demographic data with the dependent variables showed a significant

correlation between age of subject and functional status decline,  $r(178) = .222, p = .003$ , and a significant correlation between marital status and functional status decline,  $r(178) = -.149, p = .045$ . These results show that with increasing age there was functional status decline, and those who identified themselves as married or partnered showed less functional status decline, than those who were not married or partnered.

Logistic regression analysis was conducted to assess the impact of age, married or partnered status, type of unit, nurse caring behaviors, and the interaction variable of type of unit and nurse caring behaviors on hospitalized elders' functional decline. Logistic regression was used because the outcome variable decline is a categorical variable; the variable age was a continuous variable measured on an interval scale. The full model containing all predictors was statistically significant,  $\chi^2(5, n = 180) = 13.797, p = .017$ , indicating that the model was able to distinguish between variables that did and did not predict functional status decline. The model as a whole explained between 7.4% and 13.1% of the variance in elders' functional status decline, and correctly classified 85.6% of cases. As shown in Table 12, only one (age) of the five independent variables made a unique statistically significant contribution to the model. Age was the only predictor of elders' functional status decline  $B = .091, p = .007$ .

### **Total Sample Health Outcome of Functional Status**

A one-sample t-test was conducted on the scores of the health outcome of functional status for the total sample  $N = 180$  to evaluate if the percentage of elders' functional status decline in this study was significantly different from the .33 (33%) that has been reported in previous literature. The sample mean of .144 or 14% was significantly different from 33%,  $t(179) = -1250.43, p = .000$ . The 95% confidence interval for the

Table 12

## Logistic Regression Predicting Hospitalized Elders' Functional Status Decline

	<i>B</i>	S.E	Wald	df	Sig.	Exp (B)
Married or Partnered	.594	.498	1.423	1	.233	1.811
Age	.091	.034	7.283	1	.007	.913
Unit	6.387	5.018	1.620	1	.203	594.068
Nurse caring behaviors	.108	.095	1.282	1	.257	1.114
Interaction variable	.076	.065	1.349	1	.246	1.079

previously reported score ranged from -32.90 and - 32.80. This study demonstrated that there was significant less functional status decline than that which has been previously reported in the literature.

## Chapter 5

Discussion of the FindingsDiscussion of Hypotheses

The purpose of this study was to investigate the relationships among hospitalized elders' perceptions of nurse caring behaviors, type of care unit, elders' satisfaction with nursing care, and the health outcome of functional status. The theoretical relationships developed in this study were

- nurse caring behaviors are positively related to satisfaction with nursing care;
- nurse caring behaviors are positively related to health outcomes;
- education regarding how to care and caring environment (represented by the NICHE model and ACE unit) are related to higher levels of nurse caring behaviors, satisfaction with nursing care, and positive health outcomes;
- education regarding how to care and caring environment (represented by the NICHE model and ACE unit) will influence the effect of perceived nurse caring



on satisfaction with care; and

- education regarding how to care and caring environment (represented by the NICHE model and ACE unit) will influence the effect of perceived nurse caring on the health outcome of functional status.

Hypothesis 1, *Hospitalized elders' perceptions of nurse caring behaviors are positively related to satisfaction with care.* There was a significant correlation between elders' perceptions of nurse caring behaviors and satisfaction with care in the total sample ( $N = 180$ ) studied, therefore the study demonstrated the relationship between elders' perceived caring behaviors and their satisfaction with nursing care. The evidence found in this study is consistent with previous research conducted on the relationship between nurse caring behaviors and satisfaction with nursing care using the populations of medical surgical patients (Duffy, 1992; Wolf et al., 1998), cardiac patients (Wolf et al, 2003), patients on medical, surgical, and intensive-care step-down units (Larabee et al. 2004), and surgical patients (Palese et al, 2011).

This study strengthens the theory of caring and supports the theoretical proposition that nurse caring behaviors are satisfying to patients (Watson, 1979, 2005, 2008). This is an important finding because patients' satisfaction with care can be an important indicator that quality of healthcare was delivered (Donabedian, 1980; Vuori, (1991). If satisfaction with care is an indicator of quality, and perceived nurse caring behaviors are a correlate of satisfaction, then we might say that, patients' perceptions of nurse caring behaviors also indicate that quality of care was delivered. The correlation of elders' perceptions of nurse caring behaviors and satisfaction with nursing care can be an indicator that the quality of elder care in hospitals has, and is continuing to improve over

time.

Hypothesis 2, *Hospitalized elders' perceptions of nurse caring behaviors are positively related to the health outcome of functional status.* There was no significant relationship between hospitalized elders' perceptions of nurse caring behaviors and the health outcome of functional status. The CBI-E scores for the total sample ( $N = 180$ ) demonstrated that elders perceived nurse caring *more than just sometimes* and regardless of their decline. Erci et al. (2003) demonstrated a relationship between nurse caring behaviors and the health outcome of decreased blood pressure. This study took place in the home setting. The one-on-one interaction between the nurse and elder in the home could have enhanced the perception of caring by the patient and influenced the health outcome of decreased blood pressure.

Age and existing frailty might have been a confounding influence that interfered with the association of caring and functional status. Boyd, Xue, Simpson, Guralnik, and Fried (2005) found a strong relationship between frailty and hospitalization, and new-onset dependence in ADLs or functional decline in disabled older women. Elders' decline might be a physiological phenomenon over which nurse caring behaviors have little control. King (2006) proposed that there are numerous factors that contribute to functional decline in hospitalized elders, some of which include the illness itself and its "deconditioning effects," complications of therapies, procedures, and medications, and complications of bed rest. In this study, nurse caring behaviors had no direct effect on the health outcome of functional status.

Hypothesis 3, *Elders cared for on the ACE unit will report higher perceptions of nurse caring behaviors than elders cared for on the Telemetry unit.* The purpose of this

hypothesis was to test if elders' perceptions of nurse caring behaviors were higher on a unit where the environment was adapted to elders, and where nurses had gerontology certification and mandatory annual education in gerontology care. The CBI-E (nurse caring behaviors) total scores for the ACE unit were slightly lower than the nurse caring total scores for the Telemetry unit, but there was no significant difference in nurse caring scores between units. The lack of significant difference might be related to the system-wide orientation of new nurses that takes place upon hire. In this medical center, the orientation of newly hired nurses to the NICHE model of care communicates a reverence to the care of elders. The orientation communicates a philosophy in which elders will attain their highest level of function. All nurses who are employed in the health system receive a two-hour orientation on the concept of NICHE, topics of fall prevention, geriatric assessment, and geriatric syndromes such as visual changes, arthritic and perceptual changes, hearing loss, and methods of communication with hearing and cognitively impaired elders. The lectures incorporate theoretical knowledge related to caring for elders using evidence-based practice guidelines. Despite the fact that ACE unit nurses have annual mandatory requirements that relate only to geriatric care and are different from the Telemetry unit, the influence of geriatric sensitivity might be sufficiently accomplished at the system-wide orientation upon hire.

It is possible that elder care education given to nurses during their orientation could have influenced nursing care delivery in both units. Theorists proposed that knowledge of the patient and knowledge of how to care are important antecedents to caring behaviors (Crigger, 2001; Patistea, 1999; Swanson, 1991; Watson, 1979, 2008). Despite the information that nurses working on the ACE and Telemetry units hold different

certifications (the ACE unit nurses hold certification in geriatrics; Telemetry unit nurses hold certifications in Medical Surgical Nursing), their delivery of nurse caring behaviors was not differentiated. Also, it is important to note that at the time of data collection, there was no model in place whereby a Geriatric Resource Nurse would serve as a consultant to nurses on the Telemetry unit regarding how to care for geriatric patients who exhibited geriatric syndromes leading to decline. These patients would be transferred to the ACE unit rather than be cared for on the Telemetry unit. Consultation with Geriatric Resource Nurses was in the process of initiation at the close of the study. The model of care in the Telemetry unit was strictly Medical Surgical Nursing and CCU Step-Down. The education received in the new nurse orientation might have confounded the differences in delivery of care between certified geriatric nurses and certified medical-surgical nurses, or perhaps there is no difference.

Hypothesis 4, *Hospitalized elders will report more care satisfaction on the ACE unit than on the Telemetry unit.* The purpose of this hypothesis was to test if elders' reports of satisfaction with nursing care were higher on a unit where the environment was adapted to elders, and where nurses had gerontology certification and mandatory annual education in gerontology care. There was no significant difference in PSS (satisfaction) total scores between the ACE and Telemetry units.

As it was described in the discussion of hypothesis 3, the orientation given to new nurses upon hire could have influenced the lack of difference in satisfaction between the ACE and Telemetry units. Another factor that might have influenced the lack of difference between units on the outcome of patient satisfaction is the fact that staffing ratios on the Telemetry unit are frequently one nurse to six patients on days and nights.

On the ACE unit, staffing patterns are one nurse to six or seven during the day shift, and one nurse to eight or ten patients on the night shift. Better staffing on the Telemetry unit could have confounded the effect of geriatric knowledge and certification that nurses bring to the bedside. With better staffing there is the increased availability of “nursing presence” which may have diluted the positive effects of the ACE unit environment and NICHE Model of Care. Siegler, Glick, and Lee (2002) concluded from their survey of ACE unit staffing ratios that when combining registered nurses and practical nurses, staffing ratios average 1:5 on days, 1:6 on evenings, and 1:7 on nights. Curtin (2003) recommended a ratio of 1:4 to 1:6 in most acute care settings and these ratios should be adjusted to no more than 1:2 in settings where patients are debilitated. Ratios must be according to patients' characteristics. Hall et al. (2003) reported that a staff mix of registered nurses with practical nurses resulted in better patient health outcomes upon discharge.

Hypothesis 5, *Hospitalized elders who were cared for on the ACE unit will show less functional status decline upon discharge than those who were cared for on the Telemetry unit*, was not supported. The purpose of this hypothesis was to determine if there was less incidence of functional status decline on the ACE unit than on the Telemetry unit. There was no significant difference between the ACE unit and the Telemetry unit in the number of subjects who *experienced functional decline as a result of hospitalization* from admission to discharge, however subjects who were discharged from the Telemetry unit were discharged with higher Katz ADL scores than were subjects discharged from the ACE unit. This could be due to the fact that they were admitted with higher Katz ADL scores. The significantly higher discharge functional status scores of the subjects on the

Telemetry unit could explain, and could have confounded the lack of significant difference of subjects' decline between units.

Lower Katz ADL scores can equate to frailty. Therefore, the ACE unit might have admitted more frail elders than the Telemetry unit. This was a factor for which control was not applied. There was no significant relationship between unit and decline.

The research published on the positive outcomes of hospitalized elders who are cared for on ACE Units is conflicting. Salvedt et al., (2006) found no difference in function, depression, or general wellbeing of elders cared for in a Geriatric Evaluation and Management Unit (GEMU) when compared to those cared for in a general medical ward. Landefeld et al. (1995) reported that elders showed more improvement than decline when cared for on an ACE unit. Palmer et al. (2003) stressed the importance of adhering to the ACE unit concept as a model for improvement of healthcare; and this concept had a number of components that yielded positive health outcomes for elders. This included interdisciplinary daily rounds, application of interventions that centered around the elders' needs, and a *functional trajectory* in which a prediction was made about where the patient would be discharged based on what the current functional status was contrasted to the baseline functional status. The functional trajectory drove the discharge planning process.

This study found no difference in the health outcome of functional status between the ACE unit and the Telemetry units. It is possible that there was a weakness in adhering to the ACE unit concept as Palmer et al. (2003) suggests. It is possible that the implementation of these processes was not consistently applied, and adherence to the model needs to be evaluated.

Hypothesis 6, *Type of care unit moderates the relationship between hospitalized elders' perceptions of nurse caring behaviors and satisfaction with care.* In this study, nurse caring behaviors were a predictor of satisfaction with care. However, the interaction of nurse caring behaviors (predictor variable) and type of unit (moderator) was neither associated with, nor did it predict satisfaction with care. The independent variable type of unit did not predict satisfaction with care.

The observation that nurse caring behaviors predicted satisfaction supports the theoretical proposition that behaviors of the nurse as proposed by Watson, (1979, 2005, 2008) and Wolf et al. (2006) in the CBI-E are satisfying to hospitalized elders. Donabedian (1980) and Vuori (1991) proposed that patient satisfaction could be a reflection of quality care. Therefore, we might conclude from this study that nurse caring behaviors are a reflection of quality care.

Hypothesis 7, *Type of care unit moderates the relationship of elders' perceptions of nurse caring behaviors and the health outcome of functional status.* The variables of nurse caring behaviors and type of unit were not associated with functional status, nor did they predict functional status in hospitalized elders. In addition, the interaction of nurse caring behaviors and type of unit into an interaction variable was not associated, nor did it predict the health outcome of functional status. It is possible that the confounding variables of frailty, functional status upon admission, co-morbidities, and nurse characteristics could have affected the lack of associations between unit type, nurse caring behaviors and functional status.

#### Discussion of Additional Findings

#### **Elders' Perceptions of Nursing Caring Behaviors and their Satisfaction with**

## **Nursing Care**

In addition to the correlate of elders' perceptions of nurse caring behaviors and their satisfaction with nursing care, the study demonstrated that the total sample of hospitalized elders perceived that nurses cared for them, and they were satisfied with the nursing care given to them. The total scores on the CBI-E and the PSS reflected high levels of elders' perceived nurse caring behaviors, and reports of high levels of satisfaction with nursing care. This study supports the premise that hospitalized elders feel cared for and are satisfied with care in a hospital where NICHE concepts are taught as part of new nurse orientation. Early researchers reported that elders did not believe that nurses knew how to care for them with their inherent frailties, and they were not satisfied with nursing care (Ekman et al., 1999; Turner et al., 2001).

## **Functional Decline**

While there were no unit differences in subjects' functional status decline, the overall rate of functional decline was low compared to that which has been reported in earlier research. Landefeld et al. (1995), Sager and Rudberg (1998), and Covinsky et al. (2003) reported that nearly one-third (33%) of acutely ill hospitalized elders experienced functional decline. In this study, only 14.4% of elders experienced functional status decline during hospitalization. The percentage of subjects who did not decline as compared to those in previous research was statistically significant. The NICHE model and the philosophy of care might be so pervasive throughout this medical center that a "culture of elder care" is inherent in care delivery and contributes to positive health outcomes of acutely ill elders in both units equally.

## **Age and Functional Decline**



There was a significant relationship between subjects' age and the incidence of decline. Increased age was both associated with and predictive of functional decline. As age increased, so did decline from admission to discharge. Age as a correlate and predictor of elders' functional decline is documented in the literature (Boyd et al., 2008; Covinsky et al., 2003). Oldest patients were at high risk for poor functional outcomes after hospitalization because they were less likely to recover from ADL function loss before hospitalization and more likely to develop new ADL deficits as the result of hospitalization.

### **Marital Status and Functional Decline**

The significant correlation of marriage or living with a partner, and level of improved functional status could strengthen the concept of social support and positive health outcomes. King and Reis (2011) found a positive relationship between satisfying marital status and long-term survival after coronary artery bypass grafting in those between the ages of 33 and 80. King, Reis, Porter, and Norsen (1993) found a positive relationship between functional and esteem social support. Esteem social support, the type that results in feelings of wellbeing from a partner, was related to positive emotional and functional outcomes. Drefahl (2012) found that premature mortality was lowest among married people.

## **Chapter 6**

### **Summary**

The purpose of this study was to investigate the relationships among hospitalized elders' perceptions of nurse caring behaviors, type of care unit, elders' satisfaction with nursing care, and the health outcome of functional status.

In past studies, researchers reported that hospitalized elders felt that nurses did not know how to care for them, and they were not satisfied with nursing care. This study provided evidence that elders' perceptions of nurse caring behavior are associated with and predictive of their satisfaction with nursing care. The study also demonstrated that elders felt cared for and felt satisfied with the nursing care delivered. The theoretical literature on care satisfaction proposes that satisfaction with care can be an indicator that quality care was given. Since nurse caring behaviors are associated with and predict satisfaction, we might say that nurse caring behaviors can be an indicator that quality care was given.

This study found no association between nurse caring behaviors and the health outcome of functional status. There are many factors that influence elders' functional status and functional decline as the result of acute illness and hospitalization. Functional status decline has been shown in previous studies to be related to existing frailty, medical diagnosis, existing social support, and age. The strength of these factors might outweigh the effect that nurse caring behaviors have on the health outcome of functional status.

The system-wide nurse orientation of NICHE concepts and care of hospitalized elders might have confounded the lack of difference between the ACE and Telemetry units on the outcome variables of perceptions of nurse caring behaviors, satisfaction with nursing care and the health outcome of functional status. However, at the same time it may have had a positive effect on the total sample of elders' high perceptions of nurse caring behaviors, and high levels of patient satisfaction. It is also possible that this system-wide orientation, and the daily assessments of functional status by the nurses might have influenced the drop in functional status decline as compared to that which had been

reported in previous literature. This study found the overall percentage of functional status decline to be 14%. This is significantly less than the 33% of decline that was previously reported in the literature.

The lack of difference between the ACE and Telemetry units on the variables elders' perceptions of nurse caring behaviors, satisfaction with nursing care, and the health outcome of functional status, could have also been related to differences in nurse staffing or other unknown factors.

The significant correlation between increasing age and functional status decline found in this study supports previous research and is important to note. Older elders and those who are frail may need more assessment and intervention to prevent new disability and decline in ADLs. New disability and decline can lead to increased frailty, further decline, repeated hospital admissions, and increase healthcare costs.

The significant correlation of married and partnered elders with the positive health outcome of less functional decline supports the evidence that social support can improve health and health outcomes. Elders' relationship status can be important assessment data to identify as a risk factor that can contribute to decline and negative health outcomes.

The IOM (2001) asserted a charge to healthcare systems that the care delivery environment should be reorganized with the patient as the center, and provide healing relationships that include patients' choices and control. The IOM (2010) also charged healthcare systems to base the delivery of healthcare on evidence, as in the past health outcomes were not justifying the cost. This could be accomplished with better use of care providers, closer communication and collaboration among nurses, physicians, and other healthcare team members. The IOM (2010) charge also included newer models of care

that meet the needs of vulnerable populations.

The NICHE model of care uses best practices based on evidence and multidisciplinary communication. This study showed that within a healthcare system that implements the NICHE model of care, elders, a vulnerable population, perceived that they were cared for, were satisfied with nursing care, and had the positive health outcome of less decline than had been previously reported in the literature. This study gives evidence that the IOM (2010) charge for healthcare delivery has been implemented and has shown positive results in two units of this medical center.

### Conclusions

Nursing care of hospitalized elders is improving. Elders reported that nurses care, and elders are more satisfied than not with the way nurses care. The amount of functional decline that hospitalized elders' had experienced in the past is now less.

Nurses who are oriented to concepts of the NICHE model of care might contribute to the total positive outcomes of elders' perceptions of nurse caring behaviors, satisfaction with nursing care, and functional status. This study supports evidence that the NICHE model of care could be an answer to the IOM (2001, 2010) charge to improve the delivery of healthcare. However, the NICHE and ACE model need to be tested further. It is possible that it is not the ACE unit physical environment in which elders are cared for that contribute to their perceptions of nurse caring and satisfaction, but elements within the overarching NICHE model of care that produces positive outcomes. Therefore it might not be a place, but a concept. These and other factors still need to be explored and tested.

### Implications

Elders' perceptions of nurse caring behaviors are related to, and influence their satisfaction with nursing care. The measure of nurse caring behaviors and satisfaction with nursing care can indicate whether or not quality health care has been delivered. The importance of reinforcing concepts of elder care in new nurse orientation should not be underestimated. The NICHE model of care tested in this study demonstrated that elders perceive nurse caring positively and are satisfied with nursing care. The total subject population showed significantly more positive health outcomes related to less functional decline than has been reported in earlier studies. In this care facility, the ACE unit which included a physical environment specific to the needs of elders, nurses educated to care for elders, nursing knowledge of geriatric syndromes, assessments, and interdisciplinary rounding were not related to elders' perceptions of nurse caring, their satisfaction with nursing care, or the health outcome of functional status. It is possible that the tone set in the initial employment orientation of nurses could set into motion a culture of nurses who shape their care in a caring and satisfying way.

### Recommendations

The number of elders will continue to increase in this century, and will tax the health care system financially. Further research is necessary to identify if the ACE unit physical environment contributes to the outcomes of elder satisfaction and positive health or if it is the NICHE concept of care that is responsible. This study needs to be repeated using a NICHE and non-NICHE hospital to test the model of care. A true experimental study would be desirable whereby confounding variables are identified and controlled. The study should be replicated on other units of this hospital to see if the NICHE concept has taken *hold* throughout the hospital or if it is just two units. It might not be where the care

is delivered but how it is delivered. It might not be the environment, but the model that produces the positive outcome. Additional research is also necessary to determine the factors that result in functional decline of hospitalized elders.

Correlates of functional status in this study were increasing age and marital status. There might be a mind-body interplay related to decline. Research in this area would give us insight to identify risks and set interventions into motion to halt the process of decline. Older elders and those who are not married or partnered may be at higher risk for decline. It is important to validate the factors of age and social support and identify other correlates of decline.

Elder care is complex. It is a specialty that requires specialized education. In this research setting, elders' perceptions of nurse caring behaviors, elders' satisfaction with nursing care, and their health outcome of functional status may have been influenced in a positive way as the result of elder care education.

As the generation of baby-boomers become elders, their care needs and wants may change from what the present day elders think is important. Baby Boomers might have different wants, needs, expectations, and health care issues than the generation of elders who lived before World War II. Friedrich (2001) proposes five definitions of aging, one of which is *historical or contextual* age. This refers to the elderly individual's lifespan related to the time period or century within which the elder has lived. It includes the differences in lifestyles that occur from past to present time. Qualitative studies should be done on an ongoing basis to identify if what is truly wanted and needed by elders has changed over time. At least every ten years, elders will come to the present health care scene with health care wants and needs different from previous generations.

While this study demonstrated improvement in the care of hospitalized elders, much work is needed to identify the most cost effective way to deliver care to elders that is delivered in ways that is highly interpersonal, skilled, satisfying and yields positive health outcomes.

### Limitations

#### **Instrument Validity**

The instrument Caring Behaviors Inventory for Elders (CBI-E) was previously tested in community elder settings. Elders in this study had difficulty with two items: CBI-E 3 *Helping you and your family make decisions*, and CBI-E 6 *Assisting you to meet your religious/spiritual needs*. These items had high missing values. The Patient Satisfaction Scale (PSS) was previously tested and used across countries and on surgical patients. This study is the first to use the PSS with elder subjects. Elders in this study had difficulty with two items: PSS #3 *The choices I had in getting specialized nursing care when I needed it*, and PSS item #5, *The ways nurses prepared me for my discharge*. The missing values and comments made by subjects related to these instrument items were discussed in Chapter 4.

Waltz et al. (2005) reports that an instrument is valid if its intended purpose is achieved. An instrument gains validity by examining the scores resulting from a measure that is used to gain specific information with a specified population of subjects under certain conditions. Waltz et al. (2005) add that evidence for validity is best achieved within the context of each study in which an instrument is used. Validity is strengthened by using an instrument in multiple ways to achieve its' intended purpose.

The focus of content validity is to determine if the items on the instrument adequately

represent the area of content for which the instrument is intended. Elder subjects in this study reported the items as not important for their judgment of nurse caring and satisfaction. Polit (2010) explains that it is better to remove non-essential instrument items, than to compromise the power that a larger sample will give to a study that can occur by throwing out data with list-wise deletion. Further work is needed to support the validity of the shortened CBI-E and PSS in elderly populations.

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## Curriculum vitae

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<b>Secondary School</b>	Saint Cecilia High School, Englewood, NJ	1966-1970
<b>Colleges Attended</b>	Fairleigh Dickenson University BSN	1970-1974
	Seton Hall University MSN	1978-1983
	Adult Nursing/Education	
	Seton Hall University	
	Post Masters Certificate	1996-1998
	Advanced Practice Adult Nursing-Primary Care	
	Rutgers, The State University of New Jersey	
	PhD Nursing	2006-2013
<b>Positions Held</b>	V.A. Hospital, East Orange, New Jersey, Staff Nurse MICU/CCU, 1974-1976	
	Newark Beth Israel Medical Center, Newark, New Jersey Staff Nurse Open Heart Recovery/Medical CCU, 1977-1980	
	Clinical Coordinator 1981-1982	
	Passaic County Community College, Paterson, New Jersey Instructor Associate Degree Nursing Program, 1984-1988	
	Hackensack Medical Center, Hackensack, New Jersey Per Diem Staff Nurse, MICU/CCU, 1980-1981;1988-1994	
	Somerset Medical Center, Somerville, New Jersey 1999-2002	
	Nurse Practitioner Hospital coverage per diem	
	Ahmad Mur, MD	
	Nurse Practitioner Collaborative Practice 2002-2012	
	Essex County College, Department of Nursing, Newark, New Jersey	
	Assistant Professor	1988-1995
	Associate Professor	1995-2013
	Chairperson	1998-2005
	Nursing Program Administrator	2010-2013
<b>Publications</b>	Dey, M., Kelly, M, Robertiello, C. (1999). Nurse practitioners on call <i>Nursing Spectrum</i> , 11.	
	Dey, M. (2000). A brave decision. <i>Star Ledger</i> , March 24.	
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