Opening the Black Box: Understanding Adult Inpatient Falls

Laura M. Rogers
Loyola University Chicago

Follow this and additional works at: https://ecommons.luc.edu/luc_diss

Part of the Nursing Commons

Recommended Citation

This work is licensed under a Creative Commons Attribution-Noncommercial-No Derivative Works 3.0 License.
Copyright © 2013 Laura M. Rogers
LOYOLA UNIVERSITY CHICAGO

OPENING THE BLACK BOX:
UNDERSTANDING ADULT INPATIENT FALLS

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE GRADUATE SCHOOL
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

PROGRAM IN NURSING

BY
LAURA M. ROGERS
CHICAGO, ILLINOIS
AUGUST, 2013
ACKNOWLEDGEMENTS

Foremost, I am grateful for the two Frans in my life: my dissertation chair, Dr. Fran Vlasses, and my husband, Fran Carpino. Both Frans are kind, gentle, and pillars of humanity. I am truly appreciative of their steadfast support.

To my dissertation chair, Dr. Fran Vlasses, I thank you for your willingness to believe in my abilities to ‘stay the course’. To my husband, Fran Carpino, I thank you for your love and encouragement over the last thirty years. You are my rock and my touchstone, always reminding me that together we are stronger than any life storm.

I am tremendously thankful for the love of my parents and my daughter, Sara. Your patience and kindness, especially with household duties, allowed me to complete the arduous work of dissertation writing.

Thank you to my committee members, Dr. Ida Androwich and Dr. Sheila Haas. Your unwavering tutelage guided me through discovery and provided ample opportunities to sharpen my scholarly skills. I am thankful that you shared your expertise, thus providing me with inspiration and perseverance.

To my mentor Dr. Mary Ann McDermott, I thank you. Your email support and meetings for coffee offered me much needed, hope and fortitude. I am indebted to the generosity of Ms. Judy McHugh and Ms. Darlene Humay. Thank you for allowing me access to your work environment. Finally, thank you to my friends Marilyn and Kay, ever reminding me that “miracles do happen, if we work for them”.

iii
Knowing is not enough; we must apply. Willing is not enough; we must do.

—Johann Wolfgang von Goethe

_Wilhelm Meister’s Journeyman Years_
### TABLE OF CONTENTS

ACKNOWLEDGEMENTS iii

LIST OF FIGURES viii

ABSTRACT ix

CHAPTER ONE: STATEMENT OF THE PROBLEM 1
   Introduction 1
   Background 6
      NSQO Theoretical Framework 7
         Conceptualization of Inpatient Falls as an NSQO 10
   Significance 13
   Organizational Impact 15
   Professional Accountability 17
   Summary 18

CHAPTER TWO: REVIEW OF THE LITERATURE 20
   Nurse Staffing and Adult Inpatient Falls 21
   Inpatient Fall Risk Assessment Scales 25
      Hendrich Fall Risk Assessment Scales 28
         Hendrich I fall risk assessment scale 28
         Hendrich II fall risk assessment scale 29
      Morse Fall Risk Assessment Scale 30
      STRATIFY Fall Risk Assessment Scale 32
   Inpatient Fall Prevention Strategies 35
      Fall Prevention Programs 37
         Environmental Interventions 39
   Translation Science: Inpatient Falls 40
   Methodological Questioning 43
   Methodological Recommendations 48
   Purpose for the Study 51
   Summary 53

CHAPTER THREE: METHODOLOGY 56
   Domain of Inquiry (DOI) 58
   DOI Research Questions 58
   Assumptive Premises 58
   Orientational Definitions 59
   Purpose/Goal Statements 62
   Sample Characteristics 62
      Key Informants 63
         General Informants 65
CHAPTER FOUR: PRESENTATION OF FINDINGS

Culture Care Themes

Universal Culture Care Theme I

Care pattern 1a: Blaming, motivated by self care

Culture care influences

Cultural lifeways

Philosophical factors

Care pattern 1b: Vulnerability during illness

Culture care influences

Health and illness factors

Kinship/social factors

Universal Culture Care Theme II

Care pattern 2a: Mitigating risk with the fall risk scale

Culture care influences

Educational factors

Care pattern 2b: Mitigating risk within the physical environment

Culture care influences

Environmental factors

Technological factors

Diverse Culture Care Theme

Care pattern: Efficacy of staffing patterns

Culture care influences

Economic factors

Kinship/social factors

Political/legal factors

Summary

CHAPTER FIVE: DISCUSSION

Culture Care Themes

Nursing Care Modalities

Culture Care Preservation/Maintenance for Self Care Despite Vulnerability Due to Illness

Implications for nursing practice

Implications for nursing administration

Implications for nursing education
Culture Care Accommodation/Negotiation and the Translation of Inpatient Fall Risk 139
Implications for nursing practice 140
Implications for nursing administration 141
Implications for nursing education 142
Culture Care Repatterning/Restructuring and Remodeling the ‘Lay of the Land’ 143
Implications for nursing practice 144
Implications for nursing administration 145
Implications for nursing education 146
Limitations 148
Recommendations for Future Research 148
Ethnographic Recommendations 148
General Recommendations 149
Summary 150
Conclusion 153

APPENDIX A. STUDY PROTOCOL FLYER DISTRIBUTED TO NURSING MANAGEMENT AND KEY AND GENERAL PARTICIPANTS 161

APPENDIX B. LEININGER’S SUNRISE ENABLER TO DISCOVER CULTURE CARE 163

APPENDIX C. ACCULTURATION HEALTH CARE ASSESSMENT 165

APPENDIX D. OBSERVATION-PARTICIPATION-REFLECTION ENABLER 168

APPENDIX E. ETHNONURSING DATA ANALYSIS PHASES 170

APPENDIX F. TABLES OF RESEARCH STUDIES (TABLES 1-6) 172

APPENDIX G. TABLES OF RESULTS (TABLES 7-10) 179

REFERENCES 184

VITA 206
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Systems theory ‘black box’ pictorial</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Example of adult inpatient falls (NSQO)</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>A proposed theoretical model for translational inpatient falls science</td>
<td>46</td>
</tr>
<tr>
<td>4</td>
<td>Key informant enrollment results</td>
<td>64</td>
</tr>
<tr>
<td>5</td>
<td>Circumstances of the adult inpatient fall event</td>
<td>102</td>
</tr>
</tbody>
</table>
ABSTRACT

Within the United States, falls are the largest category of adverse events reported in hospitals. Injuries associated with falls include increased costs, extended length of stays, increased mortality and morbidity, and liability to hospitals. The purpose of this study was to discover, describe, and systematically analyze universal and diverse care meanings and expressions of adults experiencing a fall while hospitalized. The research was conceptualized with the ethnographic theoretical framework of Culture Care Diversity and Universality (Leininger 2001, 2006). Data collection took place in a large academic medical center, over a five month period and included 24 participants: eight adult inpatients experiencing a fall event and sixteen registered nurses with direct knowledge about the adult inpatient fall event. Observation, participation, and ethnographic interviews were used to collect data in the research context of the participants. A systematic, rigorous, and in-depth data analysis was completed using the Data Analysis Guide (Leininger 2001, 2006) along with the Ethnograph qualitative software program (Qualis Research, 2006).

Three themes emerged from the data regarding the culture of care of adults experiencing a fall while hospitalized: blaming despite vulnerability, mitigating risk, and diversity in the efficacy of staffing patterns. These findings were embedded within the social structure dimension of the hospital setting. These findings and their sociocultural influences have implications for nursing practice, administration, and education.
CHAPTER ONE

STATEMENT OF THE PROBLEM

Introduction

Falls are a significant patient safety challenge for health care settings such as hospitals. Within the United States, falls are the largest category of adverse events reported in hospitals (Pham et al., 2012). Rates vary between 1.7 to 25 falls per 1000 patient days (Currie, 2008). Higher fall rates are reported in elder care, neurology, and rehabilitation units (Enloe et al., 2005; Oliver, Healy, & Haines, 2010). Injuries associated with falls include increased costs, extended length of stays, increased mortality and morbidity, and liability to hospitals. Approximately, 30 to 50 % of inpatient falls resulted with injuries (Currie, 2008; Hitcho et al., 2004; Oliver et al., 2010). One to three percent of the injuries reported are fractures, with hip fractures as the major injury (Oliver et al., 2010). Falls account for seven percent of legal claims against hospitals (Quinlan, 2004). Yet despite all that is known about these phenomena, inpatient falls continue to occur. Despite attempts to reduce these rates, inpatient falls remain a challenging problem.

Adult inpatient falls are quite literally, a ‘patient crash’. No black box recordings are retrievable, however, with this ‘patient crash’. The science associated with the adult inpatient fall phenomena is the only ‘black box’ available. This analogy is used throughout to describe the state of our understanding about the adult inpatient fall
phenomena. Links between the airline industry and the nation’s healthcare system have long been reported (Institute of Medicine, 1999 and 2001). National patient safety experts recommended looking to the airline industry for methods and strategies in order to improve the health and wellbeing of Americans receiving healthcare services (Leape, Berwick & Bates, 2002). With approximately 100,000 medical errors reported annually, airline safety practices have gained wide acceptability (Henriksen, Battles & Marks, 2005; Singh, Saleemi, Walsh, Popert & O’Brien, 2003; Toff, 2010; Wilf-Miron, Lewenhoff, Benyamini & Aviram, 2002).

In systems theory, the ‘black box’ represents the unknown. More specifically, inputs are transformed into outputs. Figure 1 displays a pictorial of the systems theory black box. The term ‘black box’ has been used extensively within the science and engineering fields (Beizer, 1995; Belevitch, 1962; Grimshaw et al., 2007; McCreary et al., 2010). For example, in computer programming, ‘black box testing’ refers to checking for expected outputs given certain specific inputs.

Figure 1. Systems theory ‘black box’ pictorial.
The term ‘black box’ is used because the actual computer program being executed is not examined. Similarly, within the black box of the crashed airplane, there is no concern as to how the actual cockpit recordings are made.

The Donabedian triad (1966, 2003) is a systems theory most often applied in health outcomes research. This theory—or the structure, process, and outcome framework (S-P-O)—defines outcome as a change, desirable or undesirable, attributable to the delivery of healthcare (Donabedian, 2003). The major concepts of this theoretical framework are categorized as structure, process, and outcome variables. Inherent within these concepts is the supposition of the linear influence of structure and process variables on outcomes.

Within nursing, the linear relationship between structure and process variables affecting outcomes sensitive to nursing care are defined as nursing sensitive quality outcomes (NSQO). Research associated with NSQO describe organizational resources such as nurse staffing levels entering the black box as inputs, transformed into positive outcomes such as lower mortality and infection rates and improved patient satisfaction (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Clarke & Aiken, 2003; Institute of Medicine, 1996; Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2002).

Unfortunately, NSQO such as hospital acquired falls, infections, and pressure ulcers are understood in the healthcare vernacular as adverse events. Indeed, inpatient falls can be interpreted as a patient crash within the hospital setting. Understanding what occurs within the ‘black box’ of the adult inpatient fall phenomena is vital to NSQO research.
Figure 2 displays an example of the NSQO of adult inpatient fall phenomena based on the Donabedian S-P-O theory, graphically illustrating the proposed causal effect of Nursing Sensitive Patient Outcomes resultant from the interactions between nursing structures and processes.

Figure 2. Example of adult inpatient falls (NSQO).*

Although in its infancy, the translation of knowledge or implementation science is beginning to address many of the variables associated with NSQO (Rycroft-Malone, 2004, 2007; Titler, 2004, 2008). For example, Nieva et al. (2005) described three major stages regarding the translation of knowledge or implementation science: (1) knowledge creation and distillation, (2) diffusion and dissemination, and (3) organizational adoption and implementation. Qualitative methods would uncover theories related with each stage. Therefore, contextual considerations may influence the uptake as well as sustainability of hospital fall prevention interventions to reduce the rates of falls and injuries from falls. In
fact, the very nature of knowledge translation or implementation science may be contributory as well as explanatory as to the S-P-O relationship.

Innovation, communication, and social systems are the most cited contextual considerations identified within translation knowledge/science (Titler, 2010) in healthcare. Inherent within these contextual considerations are the constructs of culture and care (Cummings, Estabrooks, Midodzi, Wallin, & Hayduk, 2007; McCormack et al., 2002). Culture refers to the totality of all meanings or values, expressions or knowledge, and patterns of behaviors of a particular group (Harris, 1968; Leininger, 1970; Strauss & Quinn, 1997). Postulates associated with the construct of culture are described as follows: (1) culture is universal, yet local or regional manifestations are unique; (2) culture is stable, yet also dynamic and constantly changing; and (3) culture determines lives, yet rarely consciously intrudes into thought (Herskovits, 1955). Care refers to both folk and professional actions, attitudes, and practices that influence and explain health and wellbeing (Leininger, 1984; Leininger & McFarland, 2006; McCance McKenna & Boore, 1999). Postulates associated with the construct of care are described as follows: (1) care is universal, yet local or regional manifestations are unique; (2) care is dynamic and constantly changing; and (3) care is context specific (Brilowski & Wendler, 2005; Finfgeld-Connett, 2007).

In the science of translation knowledge, culture is purported to influence behavior (Rycroft-Malone et al., 2004; Titler, 2010). This behavior is analogous to professional nursing care. Therefore the constructs of culture and care are integral within translation knowledge/science. In the current state of the science of inpatient fall phenomena, the
examination of nursing staffing, nursing care processes such as fall risk assessment, fall prevention interventions, and contextual cultural considerations such as communication, team work, and innovation has been reported as equivocal (Tables 3, 4, 5, 6). However, the patient’s perspective inherent within the adult inpatient fall phenomena has yet to be examined. Further, the constructs of culture and care from the patient’s perspective have been minimally addressed. Subsequently, the constructs of culture and care inherent to the adult inpatient fall event have yet to be discovered. For example, what specific meanings, expressions, and patterns of culture and care are associated within the adult inpatient fall phenomena? Do these meanings, expressions, and patterns of culture and care vary among patients, professional nursing staff, and the hospital organization? Perhaps the adult inpatient fall phenomena may be the result of incongruent culturally based care within the hospital setting. Thus, an examination of culture and care may further inform the state of the science related to adult inpatient falls.

**Background**

Inpatient falls have been a concern for nurses for decades (Grubel, 1959; Haigh & Hyayman, 1935; Thurston, 1957). In addition, the universal language for nursing developed by the North American Nursing Diagnoses Association (NANDA), the interventions of the Nursing Interventions Classification (NIC), and the outcomes of the Nursing Outcomes Classification (NOC) include nursing diagnosis, interventions, and outcomes specific to the risk as well as prevention of falls within the hospital environment (Johnson et al., 2006). Moreover, after an extensive review of the literature, expert consultation, and focus groups, the American Nurses Association (1995, 1996,
1997, and 2000) implemented a nationwide quality initiative program. This program developed and disseminated the nation’s first nursing sensitive measures for hospital quality, including inpatient falls. Subsequently, the National Quality Forum (2007) established to standardize healthcare quality measurement and reporting, endorsed NSQO for U.S. healthcare organizations. The significance of NSQO within the national landscape requires an evaluation of the theoretical framework as well as conceptual definitions of inpatient falls.

**NSQO Theoretical Framework**

The most frequently cited theoretical framework supporting NSQO is the Donabedian triad (Pringle & Doran, 2003). Avedis Donabedian (1966) described patient quality outcomes as the result of the linear relationship between structure and process variables occurring within the context of a healthcare organization. The major concepts of this framework are categorized as structure, process, and outcome variables. The structure variable refers to the environmental conditions under which care is provided such as type of healthcare organization, levels of technology and quality and quantity of healthcare providers. Process variables refer to the methods of how care is delivered which are theoretically resultant from the supporting structural variables. Subsequently, outcome variables are derived from the relationship of structure variables influencing process variables, which may result in either desirable or undesirable effects. For example, structure variables such as nurse staffing affect the application of nursing care processes or interventions which result in changes or patient care outcomes. Indeed, the term ‘nursing sensitive outcomes’ resulted from a focus on how patients and their
conditions were affected by their interactions with nursing staff (Marek, 1989; National Institute for Nursing Research, 1991). Outcomes that were identified as sensitive to nursing care are described as the consequence or effects of interventions delivered and provided by nurses and are manifested as changes in the patient’s condition (Hegyvary, 1993; Johnson & Mass, 1998).

The testing of the Donabedian S-P-O framework has produced a myriad of studies examining the relationship between the structure variable of nurse staffing and patient outcomes (AHRQ, 2007; American Nurses Association, 2000; Blegen, Goode & Reed, 1998; Kane, 2007; Savitz, Jones, & Bernard, 2005; White & Hall, 2003). Overwhelmingly, the quantitative methods used to test the hypotheses of these relationships yielded conclusive evidence about nurse staffing and morbidity and mortality rates within hospitals (Aiken, Clarke, Sloane, Sochalski & Silber, 2002; Cho, Ketefian, Barkauskas & Smith, 2003; Clarke & Aiken, 2003; Clarke & Donaldson, 2008; Needleman, Buerhaus, Mattke, Stewart & Zelevinsky, 2002). Adopting the Donabedian S-P-O framework, the American Nurses Association published two reports substantiating the relationship between patient outcomes sensitive to nursing care within hospitals. The first report included a review of 175 studies (American Nurses Association, 2002). Similarly, the subsequent report reviewed an additional 183 studies (Bostick, 2003). Interestingly, it is during this time that these reports described outcomes sensitive to nursing care in terms of medical errors or adverse occurrences. For example, Blegen and Vaughn (1998) and Lichtig, Knauf and Milholland (1999) reported lower adverse rates for medication errors and inpatient falls related to higher proportions of nurse staffing.
These descriptions of medical errors or adverse occurrences as sensitive to nurse staffing established the term nursing sensitive quality outcomes (NSQO).

Adapted from the S-P-O theory of Donabedian, the Nursing Effectiveness Model (Irvine, Sidani, & McGillis-Hall, 1998) described the relationship between structure and process variables and their influence on patient outcomes. Doran, Sidani, Keatings, and Doidge (2002) empirically tested this model and reported an adjusted goodness of fit statistic of 0.97. These results indicated that the effects of structural variables on outcomes are mediated by nursing care processes.

In summary, the concepts inherent within the Donabedian S-P-O theory have been tested within NSQO research. Avedis Donabedian (2003) described patient outcomes as the result of the linear relationship between structure and process variables occurring within the context of a healthcare organization. Further, the outcomes derived from the structure and process relationship may result in either desirable or undesirable effects. However, in today’s hospital environment, NSQO is synonymous with the latter part of the equation—the undesirable effects. These undesirable effects within the patient’s condition are identified in terms of a medical error. These errors include NSQO such as inpatient falls, hospital acquired pressure ulcers, nosocomial infections, and postoperative mortality and morbidity.

Aiken, Clarke, Sloane, Sochalski, and Silber (2002) in their landmark study reported the inverse relationship between the structure variable of lower nurse staffing and outcomes of higher rates of patient mortality in Pennsylvania hospitals. In fact, given the preponderance of studies reporting a relationship between nurse staffing and NSQO
such as inpatient falls, it would be reasonable to assume that areas with higher nurse staffing levels would have neither falls nor injuries from falls. However, inpatient areas with higher nurse staffing levels due to higher acuity patients such as critical care unfortunately have variable fall and fall related injury rates (Table 1). Moreover, recent studies regarding nurse staffing improving NSQO questions this relationship. Donaldson et al. (2005) and Bolton et al. (2007) reported no impact on patient outcomes such as falls and hospital-acquired pressure ulcers in California pre- and post-state-mandated nurse staffing regulation. Additionally, Lake and Cheung (2006) reported nurse staffing had little or no association with the reduction of NSQO such as inpatient falls.

Therefore, the structure-outcome relationship based upon the Donabedian S-P-O theory requires further analysis. Although the majority of scientific evidence supports the structure-outcome relationship, what accounts for the more recent research questioning the relationship between nurse staffing levels and inpatient fall rates? In the next section, the conceptualization of inpatient falls as an NSQO is described in terms of historical development and current research.

**Conceptualization of Inpatient Falls as an NSQO**

In 1994, the American Nurses Association (ANA) board of directors commissioned a study to investigate the impact of workforce redesign on the quality of care within hospitals. The name of this project was called the Nursing Report Card for Acute Care and was conducted by the Lewin – VHI group (American Nurses Association, 1995). The methods used for this study included an examination of the literature, consultation with experts such as nurse leaders in quality and safety as well as
focus groups with hospital nurses. The initial set of 21 quality ‘indicators’ were developed based on published studies linking outcomes sensitive to nursing care, expert opinion, and feasibility of available data. In a subsequent study, the ANA (1996) examined a subset of the original quality indicators through a series of interviews with nurse leaders of 10 hospital systems and four national organizations. Characteristics of the hospital organizations included rural, urban, academic and non-teaching organizations from across the United States (U.S.). The purpose of the study was to ascertain the feasibility of implementing a national nursing report card based on each participant’s definition of the indicators, the availability of data, and overall assessment of a national nursing report card.

Originally called the ‘patient injury indicator’ and defined as “all incidents resulting in a patient fall regardless of whether the fall produces an injury” (American Nurses Association, 1996, p.15), inpatient falls are characterized in terms of a rate. Subsequent definitions include “an unplanned descent to the floor and are measured as a rate” (National Quality Forum, 2004, p.10). This rate is determined mathematically as the total number of falls, divided by the total number of patient days, multiplied by 1,000. Injuries associated with inpatient falls are also characterized in terms of a rate. Definitions associated with injuries from falls exclude falls without injury, determined 24 hours post fall through the hospital discharge date, and are measured as a rate (Federal Register, 2009; National Database of Nursing Quality Indicators, 2010). This rate is determined mathematically as a total number of injuries from falls, divided by the total number of patient days, multiplied by 1,000. Thus, both inpatient fall and injury rates are
calculated and reported in terms of a standardized unit of measure or a rate of ‘per 1000 patient days’ allowing for easier data comparisons.

Inpatient fall data is collected from patient records as well as secondary sources such as hospital incident or event reports. Inpatient falls are reported to occur mostly in patient rooms and are related to bathroom use (Hitcho et al., 2004; Krauss, 2008). Inpatient fall related injuries are classified as minor, moderate, severe or death (Currie, 2008). Fischer et al. (2005) reported the most common fall rated injuries are bleeding or lacerations (54%), fractures or dislocations (16%) and hematoma or contusions (13%). Morse (1997, 2002) further classified inpatient fall into three categories: (1) accidental falls such as tripping or slipping due to environmental factors such as wet floors, (2) unanticipated physiologic falls such as fainting or seizures, and (3) anticipated physiologic falls such as confusion.

Early studies initially referenced data from large databases such as the American Hospital Association’s survey data. Boyle (2004) suggested using unit or ward level as a risk adjustment method. A major finding in the Cho, Ketefian, Barkauskas, and Smith (2003) study was the impact of unit level risk adjustment on the occurrence of medical errors or adverse occurrences. For example, levels of acuity vary between critical care, step down, surgical, and medical units. By comparing NSQO across the levels of acuity, a modified method of risk adjustment was achieved.

Inpatient fall rates and fall related injury rates are stratified by acuity through the use of large NSQO databases. Within the U.S., the ANA (2006) created the National Database of Nursing Quality Indicators (NDNQI). With the support of the ANA and the
University of California, San Francisco (2002), the California Nursing Outcomes Coalition (CalNOC) was initiated. In addition, the Veterans Affairs Office of Nursing Services (2004) initiated the VA Nursing Outcomes Database (VANOD). Internationally, the International Council of Nurses (2005) and Lankshear, Sheldon, and Maynard (2005) report NSQO databases in Canada, Denmark, Germany, Ireland, Japan, New Zealand and Norway. Table 1 provides an example of NSQO data from approximately 196 hospitals within the CalNOC database (Brown, 2010).

In summary, definitions associated with inpatient falls and injuries are nationally recognized and accepted. These definitions are also widely applied within large NSQO databases. Robustness of measuring inpatient fall rates has been attempted by acuity stratification. Indeed, there are differences in fall and injury rates based on acuity stratification. For example, fall rates are usually higher on medical units compared to surgical or critical care units (Table 1). Nonetheless, overall inpatient fall rates have not significantly decreased over a seven year period, from 2001 to 2008, as seen in Table 2.

**Significance**

Inpatient fall rates range from 1.7 to 25 falls per 1000 patient days depending on the area of care (Currie, 2008). The highest inpatient fall rates are reported for geriatric medical patients whereas the lowest fall rates are reported for surgical patients (Enloe et al., 2005). Statistics indicate the overall fall risk is approximately 3% in all hospitalizations (Currie, 2008; Fischer et al., 2005). Within the U.S., there are approximately 37 million patients hospitalized resulting in approximately one million inpatient falls per year (AHRQ, 2005; Currie, 2008). In fact, approximately one third of
all inpatient falls are associated with an injury, from minor to severe (Currie, 2008; Hitcho et al., 2004). Although less than 1% of inpatient falls result in death, this translates to approximately 11,000 fatal falls within U.S. hospitals per year (Centers for Disease Control and Prevention, 2010).

Given the definition and categorization of inpatient falls, it is understandable that the injuries sustained from inpatient falls are classified as a medical error. Medical errors are defined as a failure due to either correct actions not proceeding as intended or intended actions are not correct (Reason, 1990). This definition of medical error is congruent with the conceptualization of inpatient falls as NSQO or an adverse occurrence i.e. outcome variables derived from process variables, which may result in either desirable or undesirable effects (Donabedian, 2003).

Although not all medical errors result in harm, errors resulting in injury are considered preventable (Institute of Medicine, 1999). Multiple studies report that inpatient falls are not random and therefore preventable (Currie, 2008; Thomas & Brennan, 2000). Further, since inpatient falls are considered a medical error and therefore preventable, fatal falls within hospitals should never occur. The significance regarding the etiology of inpatient fall rates and fall injury rates as being sensitive to nursing care is twofold; professional and financial. In this section, financial significance is described in terms of organizational impact, whereas professional significance is described in terms of accountability.
Organizational Impact

Within the U.S., the latest business strategy known as ‘pay for performance’ has been adopted by private and public payers of healthcare (Kurtzman & Buerhaus, 2008). Pay for performance (P4P), initiated by the federal government (Centers for Medicare & Medicaid Services, 2009), provides a higher reimbursement rate to hospitals achieving outstanding outcomes. This business strategy also reduces payment for hospital acquired adverse occurrences such as injuries from falls (Centers for Medicare & Medicaid Services, 2008). Costs related to inpatient falls resulting in hip fractures are estimated at approximately $4,000 (Inouye, Brown & Tinetti 2009) to $20,000 per episode (Encinosa & Hellinger, 2005). Indeed, inpatient falls even without injury have been reported as one of the more costly hospital events due to extended hospital stays (Paradis, Stewart, Bayley, Brown, & Bennett, 2009). Consequently, both private and public purchasers of healthcare have incorporated a ‘values based’ approach to paying for hospital services. Although hospital services such as inpatient care provided by nurses is treated as a fixed cost and billed as a ‘room and board’ fee (Welton, Zone-Smith, & Fischer, 2006), a values based purchasing approach is invariably linked to NSQO. For example, medical errors associated with inpatient fall injuries are described as ‘never events’ (Centers for Medicare & Medicaid Services, 2007). This term not only applies to the very definition of a medical error but equally to the reality of ‘never paying for this event’. In fact, mechanisms for data collection specific to fall injury rates relate to injury codes, or E-Codes, as secondary diagnosis codes within the International Classification of Diseases (ICD-9) system used for all hospital services.
The impact that NSQO clearly contribute to the bottom line of a healthcare organization stems from the old adage that money talks. By improving NSQO results, healthcare organizations receive higher reimbursements for care from public and private payers. In addition, these higher reimbursements are associated with bonuses and other financial incentives for hospital executives (Greene, 2006; Romano, 2005). Further, achieving and maintaining ANCC Magnet recognition status requires hospitals to report NSQO results. Indeed, inpatient fall rates are reported as significantly lower in ANCC Magnet hospitals (Lake, Jingjing, Klaus, & Dunton, 2010).

Another example of how NSQO contribute to the bottom line of healthcare organizations includes government funding for projects aimed at improving NSQO. For example, the Minnesota Nursing Facility Performance Based Incentive Payment Program has invested approximately $18 million supporting projects such as fall reduction in over 160 healthcare facilities (Cooke et al., 2010).

**Professional Accountability**

Since the days of Florence Nightingale, measuring the effectiveness of nursing care has demonstrated the value of the profession. The effects of nursing care are regularly described and included within the healthcare delivery debate (Institute of Medicine, 1996, 1999, 2001, 2004). Effective healthcare delivery is ascertained through the measurement of health outcomes. Measuring NSQO provides the best evidence of the impact of nursing care. Measuring the effectiveness of nursing care is synonymous with NSQO research. In fact, NSQO research has been influential within public policy. For example, the Institute of Medicine (2004a) provided recommendations regarding nurse
staffing hours and mandatory overtime. Subsequently, many states within the U.S. have laws regulating nurse staffing hours including overtime. More recently, the Centers for Medicare & Medicaid (CMS) have proposed participation in a clinical database registry for NSQO as a national measure of hospital quality (Centers for Medicare & Medicaid, 2010). Consequently, healthcare facilities not participating in a NSQO database registry may be sanctioned as well as may jeopardize their accreditation status.

More importantly, these NSQO adverse events are not the result of nursing care but are described in relation to inadequate quality nursing care (American Nurses Association, 1996, 2002; Schubert et al., 2008; White & Hall, 2003). In fact, Schubert et al. (2008) reported the rationing of nursing care as ‘implicit’ after controlling for nurse staffing ratios (p = 0.21; p value < 0.001). As measured with the Basel Extent of Rationing of Nursing Care instrument (BERNCA), the implicit rationing of nursing care was reported as a ‘predictor of adverse patient outcomes’ (Schubert et al., 2008, p. 231). Moreover, the definition of nursing includes accountability within the profession’s societal contract based upon the tenets of promoting and restoring health, preventing illness, and alleviating suffering (American Nurses Association, 2010). This accountability not only extends to the recipients of nursing care, the patient and their family, but colleagues within the profession. Rush et al. (2008) reported ‘considerable stress’ for nurses and use of ‘coping strategies’ when inpatients fall while in their care, and even more so, when patients sustained injuries. The accountability of preventing inpatient falls and their injury lies within the purview of the profession of nursing.
The association of inpatient fall rates and fall injury rates as being sensitive to nursing care is significant in terms of accountability to patients, their families, and colleagues within the profession as well as the healthcare facility. In fact by improving NSQO results, nurses do not bear the costs associated with inpatient falls and healthcare organizations receive higher reimbursements from both public and private payers. Indeed, hospitals and healthcare organizations working towards these improvements have received government funding (Centers for Medicare & Medicaid, 2010; Cooke et al., 2010). Professional nursing is accountable to both the public as well as colleagues in the promotion and prevention of illness and the alleviation of suffering associated with inpatient falls.

Thus, the significance inpatient falls adversely affecting all parties involved in the ‘crash’ cannot be understated. Reed, Blegan, and Goode (1998) reported that inpatient falls were not correlated to severity of patient illness but to the quality of nursing care. Undoubtedly, the quality of nursing care results from nursing care processes either applied or not within the hospital environment.

Summary

Adult inpatient falls can literally be interpreted as a patient crash within the hospital setting. Definitions associated with inpatient falls and injuries are nationally recognized and accepted. Overall, inpatient fall rates have not significantly decreased over a seven year period, from 2001 to 2008 (see Table 2). Understanding what occurs within the ‘black box’ of the adult inpatient fall crash is vital to NSQO research.
The majority of NSQO research has focused exclusively on variables associated with the Donabedian (1966, 2003) framework. However, recent NSQO research is beginning to address many of the contextual variables associated with the translation of knowledge/science (Rycroft-Malone, 2004, 2007; Titler, 2004, 2008) into practice. For example, contextual variables within translation knowledge/science are the constructs of culture and care (Cummings et al., 2007; McCormack et al., 2002). Cultural and social structure factors such as language, philosophy of life, kinship, politics, economics, education, technology, and the environmental context can support as well as prevent the translation of knowledge/science (Leininger, 2006; Long et al., 2008; Scott & Pollack, 2008; Vandergeest & Finkler, 2004). Nonetheless, the constructs of culture and care inherent within the adult inpatient fall phenomena have yet to be discovered. As such, the examination of these constructs and their sociocultural influences require an ethnographic approach (Fetterman, 2010; Hunter et al., 2008; LeCompte & Schensul, 2010).
CHAPTER TWO

REVIEW OF THE LITERATURE

Search methods for the identification of studies describing hospital falls consisted of two steps. First, a search was conducted of the databases CINAHL, Ovid Medline and Nursing, EBM reviews Cochrane, ACP and DARE, and PubMed for the previous 10 years. Limits were set for research studies in peer review journals using the following search terms: ‘nursing sensitive quality outcomes’, ‘hospital falls’, ‘fall prevention’, ‘fall risk assessment’, ‘fall injury’, ‘ethnography’, ‘hospital culture’, ‘Leininger’, and ‘translation science’. Second, references from relevant articles were also searched for additional studies using the snowball technique. Inclusion criteria included studies reporting inpatient fall statistics whereas exclusion criteria included studies in long term care, community settings, and pediatric populations. These criteria resulted in the following studies for this review: ten studies, one systemic review, and one meta-analysis associated with nurse staffing; ten studies associated with risk assessment; four studies, four randomized controlled studies, and three met-analyses associated with prevention interventions; and eight studies associated with translation science. To date, no ethnographic inpatient falls studies were published for review. However, translation science studies included descriptions of sociocultural factors and their impact on inpatient fall statistics. Of significance, no studies reporting the patient perspective associated with
hospital falls were published for review. The following is a review regarding the current state of the science related to the adult inpatient fall phenomena.

**Nurse Staffing and Adult Inpatient Falls**

Nurse staffing definitions include total nursing hours per patient day, RN hours per patient day and skill mix percentages (AHRQ, 2007; National Database of Nursing Quality Indicators, 2010). Total nursing hours per patient day represents all nursing staff involved in direct patient care including registered nurses (RN), licensed practical/vocational nurses (LPN/LVN), and assistants or aids. RN hours per patient day represents only direct care hours provided by a registered nurse (RN) and excludes hours provided by other staff such as LPN/LVN, assistants, and aids. Both of these indices are reported as a rate determined mathematically by dividing the respective hours by the total number of patient days, multiplied by 1,000 (AHRQ, 2007). Skill mix is reported as the percent of RNs, LPN/LVN, assistants/aids to the total nursing hours (National Database of Nursing Quality Indicators, 2010). Nurse staffing data is obtained from the organization’s payroll records (AHRQ, 2007; Bolton et al., 2007; Donaldson et al., 2005; Dunton et al., 2004; National Database of Nursing Quality Indicators, 2010; Whitman et al., 2002).

Addressing structure variables such as nurse staffing and skill mix has been reported as efficacious as a strategy for reducing inpatient fall and injury rates (AHRQ, 2007; Blegan & Vaughn, 1998; Dunton, Gajewski, Tauton, & Moore, 2004; Needleman, 2002, 2006; Sovie, & Jawad, 2001; Titler et al., 2011; Whitman, Kim, Davidson, Wolf, & Wang, 2002). Using retrospective multivariate regression analyses, Blegan and Vaughn
(1998) reported higher rates of RN hours per patient day were associated with lower rates of inpatient falls (R2 = -0.456, p < 0.05). Populations within this study included data from medical, surgical, intensive care, obstetrics, and skilled care patients and staffing from 11 U.S. hospitals over 36 months. Regression models included control variables of time, per quarter, and Medicare Case Mix index, per year. This multisite, multiyear study confirmed similar findings from an earlier study done within a single hospital setting by the same authors (Blegen, Goode & Reed, 1998).

Using a large data set within the National Database of Nursing Quality Indicators, Dunton et al. (2004) reported higher fall rates were associated with fewer total nursing hours per patient day and lower RN hours per patient day. Populations within this study included medical, surgical, and step down patients and staffing data from 282 U.S. hospitals. Interestingly, smaller hospital bed size was reported as significant for rates of inpatient falls (p = 0.009) and fall related injuries (p = 0.001). This study is limited in that data was from only one quarter or three months in the year, 2002.

Titler et al. (2011) reported an inverse relationship between RN skill mix and inpatient falls. Specifically, for each 10% increase in RN skill mix, the odds of falling decreased 18.8% (p. 132). These findings were statistically derived from generalized estimating equations (GEE) analysis. The sample consisted of 7,851 patients aged 60 or older, from 1998 to 2002. Populations included data from medical, surgical, and intensive care patients. Data was obtained retrospectively from nine clinical and administrative data repositories from one tertiary care hospital.
Using a prospective multisite approach, Sovie and Jawad (2001) and Whitman et al. (2002) reported an association between nurse staffing and inpatient fall and fall related injury rates. Populations within the Sovie and Jawad (2001) study included data from medical and surgical patients and staffing from 29 U.S. hospitals. Interestingly, inpatient fall rates as well as patient satisfaction rates regarding pain management were also associated with nurse staffing indices. Inpatient fall rates declined as the number of registered nurse hours increased per patient day ($p = 0.02$), whereas pain management satisfaction rates improved as the number of registered nurse hours increased per patient day ($p = 0.007$). Populations cited by Whitman et al. (2002) included medical, surgical, intensive care, and intermediate care patients and staffing data from 10 U.S. hospitals. The results from this study indicated that the impact of nurse staffing on fall rates varied across patient populations. An inverse relationship was reported between total nursing care hours and fall rates in the intensive and intermediate care populations. Inpatient fall rates were not associated with nurse staffing indices in general medical populations. These findings may be due to a lack of regression model control variables such as acuity or case mix indices.

However, Bolton et al. (2007) Donaldson et al. (2005) and Lake and Cheung (2006) contradict these findings (Table 3). Using data from CalNOC, Bolton et al. (2007) compared nurse staffing data and rates of inpatient falls from 252 units in 108 west coast hospitals in the U.S. This data is from a four year period; the first six months prior to state staffing regulation in 2002 compared to two years post regulation in 2006. Populations included medical, surgical, and step down units. No significant trends were
identified for inpatient fall rates or fall related injury rates pre- and post-state nurse staffing regulation. Indeed, these results are consistent with previous smaller CalNOC studies (Aydin, Bolton, Donaldson & Brown, 2000; Bolton et al., 2001). For example, Aydin et al. (2000) and Bolton et al. (2001) reported no association between nurse staffing and inpatient fall rates from 28 and 38 hospitals, respectively.

In the eight studies included in their systematic review, Lake and Cheung (2006) reported that, “Collectively these studies have not identified the contributions of nurse staffing to patient falls” (p. 670). This conclusion was reported based on the lack of statistical evidence for six out of the eight studies reviewed. These six studies were based on organizational level data for nurse staffing and inpatient fall and injury rates. The inclusion criteria were publications in a peer reviewed journal, research about inpatient falls, and multivariate analysis of nurse staffing.

The contradictory evidence regarding nurse staffing and rates of falls and fall injury may have resulted from a variety influences (Table 3). More recent studies reported inpatient fall data at the unit or population level (Bolton et al., 2007; Donaldson et al., 2005; Dunton et al., 2004) whereas earlier studies reported fall data in aggregate or organizational level (Blegan & Vaughn, 1998; Sovie & Jawad, 2001; Whitman et al., 2002). Additionally, unknown nursing care processes may be mediating factors in relation to the outcome of inpatient falls. Further, these unknown processes undoubtedly and necessarily vary according to acuity or patient populations. Recently, Titler et al. (2011) reported on the association between nursing interventions and ‘their dose on falls and fall prevention’ (p. 145). Nursing interventions such as pain management, pressure
ulcer prevention and enteral tube feeding were inversely associated with falling during hospitalization. This suggests that these nursing interventions are associated with decreasing fall rates when provided at ‘high doses’ (p. 144). Interestingly, the fall prevention intervention was not associated with decreasing fall rates (p = 0.0696). This finding further indicates the need for additional research using alternative methods in order to understand the adult inpatient fall phenomena.

A systematic review conducted by Savitz, Jones and Bernard (2005), however, failed to identify specific quality patient outcomes sensitive to nurse staffing. The purpose of the review was to examine the influence of nurse staffing on quality patient outcomes. Inclusion criteria was evidence of data sources including numerator and denominator specification, unit of analysis, risk adjustment, and validation information. Based on a review of 24 research articles, Savitz et al. (2005) reported inconclusive evidence regarding the influence of nurse staffing on quality patient outcomes. Recommendations concerning nurse education and expertise as potential moderators were discussed. Several studies identified higher levels of nurse education are associated with lower inpatient mortality rates (AHRQ, 2007; Aiken, Clarke, Cheung, Sloane, & Silber, 2003). Table 3 provides a summary of nurse staffing and inpatient fall studies.

**Inpatient Fall Risk Assessment Scales**

Risk factors associated with inpatient falls have been reported extensively (Halfon, Eggli, Van Melle, & Vagnair, 2001; Healy et al., 2008; Oliva, 1965). Indeed, Muller et al. (2009) identified a previous history of falls (OR 4.6; 95% CI = 2.59 – 8.33), as well as impaired functional status (OR 5.2; 95% CI = 2.39 – 11.44) as significant
predictors for adult inpatient falls. Other risk factors identified by Krauss et al. (2008) included gait/balance deficits (AOR, 9.0; 95% CI = 2.0 – 41.0), and confusion (AOR 3.6; 95% CI = 1.6 – 8.4) whereas Hitcho et al. (2004) included elimination as a risk for fall injuries (AOR, 2.4; 95% CI = 1.1 – 5.3).

Subsequently, many fall risk assessment scales have been developed in order to identify patients at risk for falls. In fact, Myers (2003) identified over 32 fall risk assessment scales however, “few have undergone validity and reliability testing” (p. 77). Despite numerous articles on risk identification and fall prevention programs, contradictory evidence exists on the efficacy of fall risk assessment in preventing inpatient falls. For example, Adrienne (1999), Koh et al. (2009) and Tinetti et al. (1994) reported no significant reduction in inpatient falls after instituting prevention protocols following risk identification.

Approximately one half of all U.S. hospitals use either the Hendrich (1995, 2003) or Morse (1997, 2002) fall risk assessment scales, whereas the STRATIFY (Oliver, Britton, Seed, Martin, & Hopper, 1997; Oliver, Daly, Martin, & McMurdo, 2004) fall risk scale is used extensively within the United Kingdom. These scales were developed using diverse hospitalized populations, excluding pediatrics, and have been tested for validity and reliability over the years by a variety of researchers (Table 4). These assessment scales were constructed from the identification of risk factors associated with inpatient falls. Hendrich (1995, 2003), Morse (1997, 2002) and STRATIFY (Oliver et al. 1997, 2004) used retrospective case review and logistic regression models to determine independent risk factors. These assessment scales identified similar risk factors including
cognitive impairment, prior history of falling, poor mobility and altered elimination (Hendrich, 1995, 2003; Morse, 1997, 2002; Oliver, 1997, 2004). The risk factors are used as evaluation criteria within these scales; the Hendrich scales includes seven risk factors, the Morse scale includes six risk factors and the STRATIFY includes five risk factors. Although the number of risk factors varies, each scale’s factors are similar in assessing for problems associated with mobility, cognition and a history of previous falls. The STRATIFY scale differs from the other scales only in regards to assessing for vision impairment. Relative risk scores associated with each of the scales’ risk factors are used to calculate an individualized patient fall risk score. Each risk factor response generates a rating or score and a total risk factor score is obtained by summing all the risk factor ratings. Thus, a patient at risk for falling as measured by either the Hendrich I or II scale would have a score of 5 or greater on a scale ranging from 0 to 25, or 0 to 20, respectively. Using the Morse scale, a patient at risk for falling would have a score of 45 or greater on a scale from 0 to 150. Patients at risk for falling as measured by the STRATIFY scale would have a score of 2 or greater on a scale ranging from 0 to 5. The recommended frequency regarding use of these fall risk assessment scales within the care of hospitalized patients includes minimally upon each patient’s admission as well as subsequently with changes of the patient’s condition (Hendrich, 1995, 2003; Morse, 1997, 2002; Oliver et al., 1997, 2004).

Published studies reporting validity, reliability and responsiveness statistics are presented separately for these most commonly used fall risk assessment scales. Table 4

**Hendrich Fall Risk Assessment Scales**

The Hendrich I and II fall risk assessment scales were developed using diverse hospitalized populations, excluding pediatrics. Hendrich (1995, 2003) used logistic regression models to determine independent risk factors associated with inpatient falls. Risk factors including cognitive impairment, prior history of falling, poor mobility, altered elimination, and co-morbidities such as depression were identified (Hendrich, 1995, 2003).

**Hendrich I fall risk assessment scale.** Heinze et al. (2006) presented results from a cross sectional study conducted with 9174 patients in 47 hospitals and 45 nursing homes in Germany. The hospitalized patient population averaged 65 years old and consisted of 56% females. Inpatient fall risk was assessed for all admissions and data were collected from the patient’s records by research nurses during the nationwide point prevalence study. Validity statistics supporting the construct of fall risk was based upon factor analysis. Eigenvalues are the test statistic for factor analysis and describe the relatedness between factors or scale items. Eigenvalues of 1.1 and 1.8 were reported for two factors and explained 50% of the variance (Heinze et al., 2006). Thus, evidence supporting construct validity from factor analysis was minimally acceptable.

Several statistical tests can be applied to verify the reliability of a measurement instrument. Internal consistency reliability was determined by calculating Cronbach’s coefficient alpha and by convention, alpha > 0.7 is considered acceptable. However, a
low Cronbach’s alpha coefficient reported as 0.54 was below the acceptable standard (Heinze et al., 2006). Since the Hendrich I fall risk assessment scale consists of independent risk factors, a low alpha coefficient is expected although not scientifically preferable.

In a subsequent study, Heinze et al. (2008) presented results from a prospective study conducted in two geriatric wards of a German hospital. The mean patient population was 82 years old and consisted of 74% females. Admissions were randomized to different fall risk assessment scales including the Hendrich I scale. Responsiveness is reported as sensitivity and specificity results. The term sensitivity refers to an instrument’s ability to accurately identify true positives whereas the term specificity refers to an instrument’s ability to accurately identify true negatives. Heinze et al. (2008) reported sensitivity and specificity results of 75% and 47%, respectively (Table 4).

**Hendrich II fall risk assessment scale.** Kim et al. (2007) examined 5489 hospitalized patients in China and data collection was completed by two research nurses. Using a prospective descriptive design, 5489 patients were recruited over a four month period in 2005. Populations within this study included medical, oncology and surgical inpatients. Nurses collected fall risk assessment data upon admission and were blinded to each other’s findings. Measuring the agreement between observers or the inter-rater reliability is reported as the kappa (κ) statistic. The kappa (κ) statistic was reported as 0.87 which is satisfactory for inter-rater reliability. However, adequate sensitivity results were reported as 70%, but low specificity results were reported as 61% (Table 4).
A more recent psychometric study of the Hendrich II fall risk assessment scale was conducted by Lovallo, Rolandi, Rossetti, and Lusignani, (2010). Using a prospective descriptive design, 1148 patients were recruited over a three month period in 2007. Populations included medical, surgical and rehabilitation patients. Over 239 hospital nurses collected fall risk assessment data minimally with admission as well as more frequently with changes in the patient’s condition. Sensitivity and specificity results of the Hendrich II were reported as 46% and 71%, respectively (Lovallo et al., 2010).

In summary, whereas Kim et al. (2007) and Perell et al. (2001) reported acceptable sensitivity and specificity results, Heinze et al. (2008) and Lovallo et al. (2010) reported lower statistics (Table 4). Further, Heinze et al. (2006) reported a less than acceptable alpha coefficient (Table 4). Questionable construct validity precludes the reliability of the Hendrich I and II (1995, 2003) scales to effectively measure fall risk.

**Morse Fall Risk Assessment Scale**

The Morse (1997, 2002) fall risk assessment scale was developed in the adult hospital population over 20 years ago. Using a retrospective case review, risk factors such as cognitive impairment, prior history of falling, poor mobility and co-morbidities such as cancer were identified.

Chow et al. (2006) presented results from a cross-sectional study conducted with 954 patients in three Chinese hospitals. The patient population averaged 70 years old and consisted of 42% women. Patients were assessed for fall risk using the Morse (1997, 2002) scale upon admission to medical and geriatric wards. Data were collected from the patient’s records. Eigenvalues of 1.04, 1.2 and 1.4 was reported for three factors and
explained 60% of the variance (Chow et al., 2006). Thus, evidence supporting construct validity from factor analysis was acceptable.

Internal consistency reliability, however, was not confirmed as reported by a low Cronbach’s alpha coefficient of 0.26 (Chow et al., 2006). Since the Morse (1995, 2002) fall risk assessment scale consists of independent risk factors, a low alpha coefficient is expected although not scientifically preferable. The test-retest reliability statistic or intra-class correlation coefficient (ICC) was reported as 0.98, with results above the standard correlation coefficient range. However, the authors reported a low sensitivity of 31% with a high specificity of 83%.

Schwendimann, Degeest, and Milisen (2006) examined the reliability of the Morse fall risk assessment scale within a Swiss Hospital. During a four month period, 440 patients were assigned two designated wards. The mean age of the inpatient population was 70 years with 60% females. Nurses collected fall risk assessment data upon admission as well as every third day throughout the patient’s hospital stay. The kappa (κ) statistic was reported as 0.68 which is satisfactory for inter-rater reliability. However, adequate sensitivity results were reported as 80%, but low specificity results were reported as 59%.

In summary, whereas Kim et al. (2007) and Schwendimann et al. (2006) reported reliability statistics, Chow et al. (2006) reported low validity, internal consistency reliability and sensitivity statistics (Table 4). Questionable construct validity precludes the reliability of the Morse (1997, 2002) scale to effectively measure fall risk.
STRATIFY Fall Risk Assessment Scale

The STRATIFY fall risk scale was developed using a case control study of over 1700 geriatric medical patients in two British acute care hospitals. Using logistic regression models, Oliver et al. (1997, 2004) identified risk factors such as agitation, frequent toileting, prior history of falling, unsteady gait and visual impairment.

Testing of the STRATIFY scale was reported in two Canadian acute care hospitals with 620 geriatric medical patients (Papaioannou et al., 2004). Data was collected over a six month period by assigned nurses trained by the investigative team. Inter-rater reliability as well as predictive validity statistics are reported as satisfactory (Table 4). However, in a large study with over 2500 medical and surgical patients from six acute care hospitals, Milisen et al. (2007) report less sensitivity and specificity results in geriatric patients older than 75 years old. This multi site study describes the scales’ lack of responsiveness to accurately predict inpatient falls burdened with more risk factors associated with advanced age.

Kim et al. (2007) reported better sensitivity and specificity statistics with the Hendrich II scale versus the Morse scale (Table 4). Whereas Oliver (2008) reported satisfactory sensitivity and specificity results of the STRATIFY scale, Harrington et al. (2010) reported no significant difference between these scales in predicting and preventing inpatient falls. Although reliability statistics such as kappa were reported as satisfactory, internal consistency alpha coefficients were unsatisfactory for the Hendrich (1995, 2003) and Morse (1997, 2002) scales. In addition, no alpha coefficient or eigenvalues were reported for the STRATIFY (1997, 2004) scale.
In summary, a majority of the studies reviewed reported sensitivity and specificity statistics regarding the Hendrich (1995, 2003), Morse (1997, 2002), and STRATIFY (1997, 2004) fall risk assessment scales (Table 4). Not surprisingly, these statistics vary widely undoubtedly related to a lack of validity and reliability evidence associated with these scales. Obviously, these psychometric problems impede the ability of these scales to accurately identify fallers from non-fallers within the adult inpatient population. Indeed, these scales cannot accurately measure fall risk and therefore, use of these scales may contribute to the inpatient fall problem by the unintended consequence of inaccurately not identifying patients at risk for falling.

The ability of currently used fall risk assessment scales to accurately predict and prevent inpatient falls requires additional studies in order to improve the validity and reliability of these tools to measure fall risk. Oliver, Daly, Martin, and McMurdo (2004) described additional fall risk factors such as the use of analgesics which are not included within these commonly used fall risk assessment scales. Subsequent reliability testing may yield higher alpha coefficients based upon the addition of these validated risk factors. The high inter-rater reliability kappa statistics indicated that these scales are easy to use and understand and this has led to the widespread use of these scales within the acute care setting. However, construct validity and internal consistency reliability remains questionable and therefore lack the ability to accurately measure fall risk. As Rutledge, Donaldson, and Parvikoff (1998) and Hsu et al. (2004) reported, risk assessment instruments, at the very least, have improved and enhanced nurse staff awareness for considering inpatients at risk for falling and therefore fall related injuries.
In fact, the researcher who developed the STRATIFY (1997, 2004), fall risk assessment scale comments, “Fall risk prediction tools for hospital inpatients – time to put them to bed?” (Oliver, 2008).

The popularity of these ‘easy to use’ inpatient fall risk assessment scales may have promoted false reassurance. Given the propensity of these specific fall risk assessment scales, as well as the multitude of others used outside original study populations such as higher acuity areas and critical care, the ability of these tools to discriminate between fallers and non-fallers remains elusive and therefore may be contributory to overall hospital fall rates. Recent studies describe positive predictive values (PPV) or the ability to predict the percentage of patients identified as ‘high risk’ as subsequently falling or conversely, negative predictive values (NPV) or the ability to predict the percentage of patients identified as ‘low risk’ and subsequently do not fall, as a more robust measure of fall risk (Kline, 2008; Oliver, 2008). However, both PPV and NPV are derived from sensitivity and specificity testing. For example, PPV equations are derived from true positives (sensitivity multiplied by the prevalent fall rate) as the numerator divided by true positives (sensitivity multiplied by the prevalent fall rate) plus false positives (one minus specificity multiplied by one minus the prevalent fall rate) as the denominator (Simon & Boring, 1990). In general most of the studies reviewed reported fall risk assessment scales with high sensitivity values and therefore mathematically, PPV results will be high as well (Table 4). Unfortunately, this lack of measurement precision has led to an overabundance of patients erroneously identified as either high or low risk for falling. Therefore it is recommended that more development
and research is needed in order to improve the validity and reliability of these fall risk assessment scales.

Additionally, these fall risk assessment scales are recommended to be used minimally upon each patient’s admission as well as subsequently with changes in a patient’s condition (Hendrich 1995, 2003; Morse 1997, 2002; Oliver et al., 1997, 2004). Studies to date have not included frequency as a variable for comparing rates of inpatient falls and fall related injuries. Therefore it is unknown if inpatient fall rates and fall related injury rates are related to the frequency of measuring fall risk with these commonly used fall risk assessment scales.

**Inpatient Fall Prevention Strategies**

Studies regarding fall prevention strategies have been reported extensively (Table 5). These strategies include staff and patient education, the use of bed alarms and wrist identification bands, hip protectors, physical restraints and supervised exercise. Many fall prevention programs have been developed in order to reduce the rates of falls and fall injuries. However, the efficacy of these strategies to effectively reduce inpatient falls remains questionable.

Coussement et al. (2008) conducted a meta-analysis of eight studies including six randomized controlled trials and two controlled trials, and found the pooled ratio of -0.87 (95% CI = 0.70-1.08) was not significant for the reduction of inpatient falls. Populations within the reviewed studies included medical and long stay hospitalized patients. Use of the Morse (1997, 2002) fall risk assessment scale was cited within three of the six randomized trials within this meta-analysis. While Coussement et al. (2008) reported no
conclusive evidence regarding the efficacy of fall prevention strategies, ‘supervised exercise’ within the acute care setting has been reported as an effective fall prevention strategy. Supervised exercise was statistically significant as an intervention for the reduction of inpatient fall and injury rates as reported within two large meta-analyses (Cameron et al., 2010; RAND, 2003). For example, the meta-analysis of 41 randomized controlled studies with primary outcomes of rates and risk of inpatient falls, Cameron et al. (2010) reported a pooled ratio of 0.44 (95% CI = 0.20 – 0.97). The meta-analysis of 20 randomized controlled studies with primary outcomes of rates and risk of inpatient falls, RAND (2003) reported a pooled ratio of 0.81 (95% CI = 0.72 – 0.92).

Unfortunately, both of these studies included long term facilities as well as inpatient populations within their analyses.

Other fall prevention interventional studies reported various levels of evidence related to inpatient fall rates. Oliver, Hopper, and Seed (2000) conducted a meta-analysis of 10 studies including three randomized controlled trials and seven prospective studies with historical control. Populations within these international studies included medical, surgical and rehabilitation hospitalized patients. The reported pooled ratio was 1.0 (95% CI = 0.60 – 1.68) indicating the interventions such as staff and patient education, the use of bed alarms, wrist identification bands, and physical restraints were not effective for reducing inpatient fall rates (Oliver et al., 2000). In a subsequent meta-analysis, Oliver et al. (2007) reported a pooled ratio of 0.82 (95% CI = 0.68 – 0.97) indicating a slight reduction of inpatient fall rates. Use of the STRATIFY (1997, 2004) fall risk assessment
scale was cited within four of the 13 interventional studies within this meta-analyses (Oliver et al., 2007).

Fall prevention strategies such as fall prevention programs and environmental interventions are presented separately. Table 5 represents a summary of fall prevention interventional studies and inpatient fall rates.

**Fall Prevention Programs**

Fall prevention programs use strategies such as staff and patient education, multidisciplinary committees and risk assessment to reduce inpatient fall and injury rates. These types of multimodal interventional studies report varying levels of evidence on the main outcomes of inpatient falls and fall related injuries. During a nine year observation period, Barker, Kamar, Morton, and Berlowitz (2009) reported an inpatient fall injury rate reduction of 0.61 (95% CI = 0.43 – 0.88). Although this fall prevention program was associated with a substantial reduction of inpatient fall related injuries, an overall reduction of inpatient falls was not significant (Barker et al., 2009). This may be attributable to an increase in reporting as a result of staff education as well as the ‘Hawthorne effect’ related to the length of the study.

Following the implementation of a three year fall prevention program, Schwendimann et al. (2006) reported no statistical difference in fall rates (p = 0.086) for study participants in medical, geriatric and surgical wards. Use of the Morse (1997, 2002) fall risk assessment scale was reported as one of the interventions within this fall prevention program (Schwendimann et al., 2006). Although the results are reported as not
significant, data collected about patient characteristics indicated higher acuity due to the prevalence of an increase of identified fall risk factors.

Other research examining fall prevention programs have mixed results. Indeed, Koh et al. (2009) reported higher fall rates after their fall prevention program. Populations within this study included data from medical, surgical and geriatric patients of two Singapore hospitals. However, the discrepancy of higher inpatient fall rates in the interventional group compared to control groups may be due to an increase in reporting subsequent to staff education and training. Further, Krauss et al. (2008) reported an initial fall rate reduction for inpatient geriatric medical patients but this reduction was not sustained over time (p = 0.18). Additionally, inpatient fall related injury rates were also reported as nonsignificant (p = 0.53) between interventional and control groups (Krauss et al., 2008). Use of the Morse (1997, 2002) fall risk assessment scale was reported as one of the interventions within this fall prevention program.

In summary, the evidence regarding hospital fall prevention programs to effectively reduce fall and fall injury rates is equivocal (Table 5). This may be attributable to staff education and its subsequent Hawthorne effect as well as the use of a fall risk assessment intervention such as the Morse (1997, 2002) or STRATIFY (1997, 2004) risk assessment scales. Due to their poor psychometric properties, these scales are not effective for measuring fall risk and therefore, reducing inpatient fall rates.
Environmental Interventions

Environmental interventions such as bed alarms, wrist bands and physical restraints are frequently used as preventative strategies. However, the efficacy of these interventions to reduce inpatient fall rates remains inconclusive (Table 5). For example, Shever, Titler, Mackin, and Kueny (2010) reported bed alarms (90%) as the most frequently used fall prevention intervention along with other interventions such as the Morse (1997, 2002) fall risk assessment scale (40%) in their qualitative descriptive study. While an early interventional study by Tideiksaar, Feiner, and Maby (1993) reported a slight reduction of inpatient fall rates with the use of bed alarms (OR = 0.32), subsequent studies have not yielded the same results.

Cummings et al. (2008) reported using bed alarms along with other fall preventative measures such as staff education as ‘not effective’ in reducing inpatient fall rates (95% CI = 0.72 – 1.28). Study participants included geriatric patients from 12 hospitals in Sydney, Australia. Kwok, Mok, Chien, and Tam (2006) examined movement detectors similar to bed alarms and found no difference between intervention and control groups. Moreover, Vassallo, Stockdale, Sharma, Briggs, and Allen (2005) reported little or no effect on inpatient fall rates through the use of fall identification wrist bands.

Evidence regarding the use of bed alarms, fall identification wrist bands, and nursing rounds, however inconclusive, has not precluded extensive use within the hospital setting. These environmental interventions signal the importance of context within nursing practice. Using data collected from 51 hospitals, Shever et al. (2010) reported the use of bed alarms and nursing rounds at 90% and 40%, respectively. In a
large multistate study, Meade et al. (2006) described the efficacy of hourly nursing rounds for the reduction of inpatient fall rates. Using data obtained from 27 medical wards within 14 hospitals nationwide, the number of inpatient falls significantly decreased ($p = < 0.01$) within the interventional groups. However, nonrandom assignment of experimental and control groups within each hospital was selected by the organization’s management team. Further, data from “eight hospitals (19 units) were excluded from analyses because of poor reliability and of data collection” (Meade, et al., 2006, p. 62). Therefore, results as well as the reported sustained inpatient fall reductions one year post implementation may be attributable to bias as well as the Hawthorne effect. Additional studies are therefore recommended examining context for the reduction of inpatient fall rates.

**Translation Science: Inpatient Falls**

A large study designed to expedite the transfer of research into practice (TRIP) was conducted within 33 hospitals participating in the CalNOC database. However, the “analysis found that the mean changes in fall and injury rates were not significantly different between the pre- and post-data period for TRIP participating units” (AHRQ, 2008, Project evaluation section, para. 2). Specific theories addressing implementation were not identified within these studies.

Dykes et al. (2009) initially conducted a study using direct care nurse participants to identify themes related to inpatient falls. Themes such as knowledge, communication, capability and actions were identified. This data was used for the development of a fall prevention tool kit (FPTK) using health information technology. Subsequently, a
randomized study was conducted comparing inpatient fall rates within four urban east coast U.S. hospitals. Although inpatient fall rates decreased significantly (p = 0.003), no effect was reported in fall related injuries (Dykes et al., 2010).

Conversely, Brewer (2006) reported no relationship between inpatient fall and injury rates and team concepts such as positive communication, affiliation and shared goals (R2 = 0.30) from data obtained from four southwestern U.S. hospitals. This study included the testing of the trans-theoretical integration model (TIM) and was developed to understand multidisciplinary team effectiveness in acute care settings.

Another study using hospital staff identified themes such as communication and assessment as integral to the inpatient fall phenomenon (Rush et al., 2008). Study participants were not exclusively nurses but included technicians and physical therapists. Although the very definition of inpatient falls as an NSQO requires exclusivity of licensed nurses as study participants, these findings reflect contextual considerations.

Assessing the impact of communication, Hughes et al. (2008) reported ‘older people accepted traditional fall prevention messages, but most viewed them as not personally relevant’ (p. 356). Data was obtained through focus groups. Interestingly, 40% of the participants reported a fall in the previous 12 months. Further, results from the participants included that falls are not preventable (OR = 0.76%; 95% CI = 0.65-0.90) and rated the prevention of falls a high priority (OR= 1.31; 95% CI= 1.09-1.57). The major finding from this study included themes of focusing on ‘healthy aging and independence’. When presented with three different messages—highlighting falls, health, or independence—participants preferred the emphasis on ‘independence’. A focus on
health was also favored, whereas none of the participants preferred a ‘fall prevention’ message.

Mackenzie (2009) studied how falls prevention evidence is applied in practice. The population for this study included nurses (20%, n = 10), occupational therapists (60%, n=30), occupational therapist assistants (4%, n=2), physiotherapists (6%, n = 3), paramedics (4%, n=2), one geriatrician (2%, n=1) and one consumer organization representative (2%, n=1). Using a qualitative approach, participants were interviewed individually as well as in focus groups. Themes such as patient experiences with falls, clinical reasoning and access to resources were reported as significant barriers for implementing fall prevention interventions.

A study conducted by Tzeng and Yin (2009) reported 57% of patients discharged from hospitals did not believe that the fall prevention program was adequate during their most recent hospitalization (p. 44). Data obtained from the participants revealed environmental issues such as bed height and width and inadequate room design along with insufficient fall prevention education as contributory to their perceived inpatient fall risk (Tzeng & Yin, 2009, p. 45).

In a subsequent study, Tzeng (2011) triangulated data from hospital incident reports and nurse and patient perspectives associated with adult inpatient falls. The population included patients discharged from an acute care medical ward from a Michigan medical center. Although a majority of participants rated fall prevention education as helpful, 10% of the surveyed patient reported falling during their last hospitalization. Data obtained from interviews with nurses and patients along with
hospital incident reports described unsafe physical design and insufficient fall prevention education as key issues associated with adult inpatient falls. These results reflect contextual considerations and should be further empirically tested.

Explication of contextual considerations such as culture care are lacking within translation science inpatient falls research (Table 6). Moreover, this understanding of culture care requires the patient’s perspective. For example, assessing the patient’s perspective associated with fall prevention interventions would identify the effectiveness of translation science. The subsequent measurement of fall rates could provide additional evidence of the effectiveness of fall prevention science. Thus, the next phase of translation knowledge/science should include the examination of the patient perspectives related to falling within the hospital setting. Solely focusing on the ease or effectiveness of translating knowledge/science from the perspective of practitioners excludes valuable input from patients. Since patients are the ‘intended target’ of scientific knowledge and evidence, there are reasons for including the patient perspective in translation knowledge/science studies: Patients are the recipients of the application of scientific evidence, and the patient’s perspective minimizes ethnocentrism and provides for the opportunity to identify culture care values in order to improve NSQO.

**Methodological Questioning**

Donabedian (1966) proposed the question, “does the patient receive good nursing care?” and his subsequent answer is based on the derivation of “an examination of the process of care” (p. 1834). Although the Donabedian (1966, 2003) theoretical framework has been useful in demonstrating a relationship between structure variables such as nurse
staffing and outcomes such as mortality, adverse events sensitive to nursing care such as inpatient falls continue to occur. An examination of nursing care processes as well as a possible relationship between process and outcome is warranted (Doran et al., 2006).

The Institute of Medicine (2001) identified an association between nursing care processes and hospital acquired adverse events such as inpatient falls, medication errors and post operative complications. The Nursing Effectiveness Model (Irvine et al., 1998) reported that the relationship between structure variables and outcomes are mediated by nursing care processes. Schubert et al. (2008) reported an association between care processes and NSQO, but more specifically, the implicit rationing of nursing care processes was identified as an important predictor. For example, nursing care processes withheld due to time constraints were identified as a predictor for inpatient fall rates.

These processes may vary according to acuity or patient populations. The contradictory evidence regarding the inpatient fall phenomenon requires an examination of nursing care processes ideally stratified per acuity levels such as areas with higher staffing ratios. While multimodal interventional approaches are reported as somewhat significant in preventing inpatient falls, most study populations exclude higher acuity populations (Healey et al., 2004, 2008).

Just as the original ‘patient care injury indicator’ or rates of falls and injury were stratified per acuity level, most notably in national databases such as NDNQI and CalNOC, further analysis of inpatient falls is warranted at the shift or moment of care level. Methods most appropriate for this level of analysis require a qualitative approach (Polit & Beck, 2012). Of particular interest is the discovery of specific meanings,
expressions, and patterns of culture and care within high acuity populations in relation to adult inpatient falls.

The study of nursing care processes such as clinical assessment may be more informative to NSQO research. Studies have demonstrated the efficacy of process variables such as rounding and surveillance for reducing inpatient fall rates (Meade, Bursell, & Ketelsen, 2006). Interestingly, fall and fall related injury rates continue despite higher nurse staffing levels and purportedly surveillance and assessment incumbent within these critical care areas. Qualitative research methods must be used to capture, for example, the importance of clinical judgment as an effective process for the prevention of inpatient falls (Myers & Nikoletti, 2003; Polit & Beck, 2012). Also, Shever et al. (2008) reported a mere $191.00 dollars more per hospitalization was associated with high surveillance of elderly patients at risk for falling.

The influence of structure variables such as nurse staffing on patient outcomes may have reached a maximum dose effect (Brooten & Youngblut, 2006). Dunton, Gajewski, Tauton, and Moore (2004) reported no evidence that nurse staffing above 15 hours per patient day had a positive effect on inpatient falls within acute care hospital units (p. 58). Achieving a maximum dose of the structure variable nurse staffing, along with lack of valid and reliable fall risk assessment measurement scales and fall prevention strategies informs the need for further evaluation of the constructs of culture and care and their subsequent relationship to inpatient falls.

Current contributors to NSQO research are once again promulgating the same deductive methods for the next phase of ascertaining relationships between nursing care
processes and patient outcomes. Kurtzman and Corrigan (2007) and Riehle, Hanold, Sprenger, and Loeb (2007) are recommending the use of same methodological approach for the study of NSQO, which may in effect, actually yield varying levels of evidence or contradictory evidence as already described within the NSQO structure and outcome association. In essence, the old saying of ‘repeating the same thing over and over again but expecting different results’ may possibly impede advancing the state of the science regarding inpatient falls.

The current state of inpatient fall research has yielded equivocal evidence, which raises methodological questioning. First, since the majority of inpatient fall research is quantitative in nature, might qualitative methods offer some benefit? Second, how would this benefit translate into practice? A proposed combination of the theoretical frameworks of Donabedian (1966, 2003) and translation science may be explanatory (see Figure 3).

Figure 3. A proposed theoretical model for translational inpatient falls science.*

* A proposed synthesis of the theoretical frameworks of Donabedian (1966, 2003) and translation science.
Recent developments in translation knowledge/science have begun to answer these types of methodological questions (Rycroft-Malone, 2004, 2007; Titler, 2004, 2008). Hunter, Spence, and Scheinberg (2008) reported the translation of knowledge/science may be best supported through ethnographic approaches. Ethnographic methods allow for contextual considerations thus providing the ‘humanization’ of clinical work within the hospital setting (Pope, 2005; Vandergeest & Finkler, 2004). Contextual considerations such as cultural and social structure factors are examined within ethnographic research methods. Cultural and social structure factors such as language, philosophy of life, kinship, politics, economics, education, technology, and the environmental context can support as well as prevent the translation of knowledge/science. Sociocultural factors known to impede the translation of knowledge/science are hierarchical structures of authority, a workplace ethos discouraging innovation, and an emphasis on clinical experience (Scott & Pollack, 2008). Whereas sociocultural factors such as teams, relationships, and supportive communication environments allow for the creation of ‘meaning for all human clinical activities’ (Hunter et al., 2008). These sociocultural factors influence culture and care within the hospital setting. As such, the examination of these constructs and their sociocultural influences require an ethnographic approach (Fetterman, 2010; LeCompte & Schensul, 2010).

Hospitals are domains in which beliefs and practices relating to illness and health are central features of the culture (Speziale & Carpenter, 2007). Hospitals are cultural and social systems, thus exhibiting specific organizational behaviors. Juxtapose the patient’s
cultural values and beliefs into the hospital’s cultural system which results in socialized practices, which may or may not result in mutually agreed upon definitions of health and wellbeing (Champagne, Lemieux-Charles, & McGuire, 2004). Social and cultural adjustments and expectations are normal outcomes of a dynamic system, such as hospitals. Understanding the translation of knowledge/science through ethnographic methods provides for patient, clinician and hospital meanings, expressions, and patterns of culture and care to be examined (Long, Hunter, & Vandergeest, 2008). Ethnographic studies of health and illness provide an opportunity to examine culture care relationships.

**Methodological Recommendations**

Based on the significance and current understanding of the adult inpatient fall phenomena, methodological recommendations are necessary. These recommendations include ethnography as a method for examining the constructs of culture and care. There is a critical need for the discovery of the patient’s perspective. A qualitative approach is required to identify, describe, and account for these aspects. The efficacy of translation of knowledge/science requires the inclusion of the patient’s perspective albeit the very recipients of adult inpatient falls science. The theory and research method for this examination of culture and care within the adult inpatient fall phenomena is the Culture Care theory and research method (Leininger 1988, 2001).

The ethnographic theoretical framework of the Culture Care theory has been used as a method to study culture and care provided within hospitals (Leininger 1988, 2001). The theory is derived from both anthropology and nursing. This theory uses ethnography, ethno science and ethnonursing research methods to study culture, care and nursing
phenomena. According to Leininger (1970), patients have a right to have their sociocultural backgrounds understood and states that her theory is based on the ‘interrelationships of culture and care’. Anthropologically speaking, according to Leininger (1970, 1994), the culture of nursing refers to the learned and transmitted lifeways, values, symbols, patterns and normative practices of members of the nursing profession. In contrast, the culture of patients also refers to the learned and transmitted lifeways, values, symbols, patterns and normative practices of adults hospitalized due to illness (Leininger 1970, 1994). Subsequently, the term ‘culture care’ refers to a synthesis of the constructs of culture and care from both perspectives (Leininger & McFarland, 2006). These perspectives are called ‘emic’ and ‘etic’. These ethnographic terms describe the insiders or ‘emic’ perspective as well as the outsider’s or ‘etic’ perspective (Fetterman, 2010; LeCompte & Schensul, 2010; Leininger, 1970). As such, the ‘emic’ or insider’s perspective from the adult experiencing a fall while hospitalized is minimally known and understood by the ‘etic’ or outsider’s professional group.

The Culture Care theory has been used to explain and predict care through the analysis of culture within a health care context (Leininger, 1988). Accordingly, “Folk, professional and nursing care values, beliefs and practices as well as institutional norms can be identified and explained by the theory “ (p.210). Knowing the specific meanings, expressions, and patterns of culture and care among differing populations, provides the needed knowledge for the provision of professional nursing care that is congruent with individuals, families, and communities (Leininger, 1986). The Culture Care theory (Leininger, 1988,1997, 2006) has been used in the study of professional nursing culture,
healthcare systems such as hospitals and skilled nursing home facilities, prisons and mental health facilities, as well as clinical conditions such as HIV/AIDS, childbirth, death and pain (Leininger & McFarland, 2002).

Most generic care meanings, expressions and patterns are embedded and integral parts of social structures, cultural values, and worldviews (Leininger 1970, 1988, 1990). The study of these variables requires an ethnographic approach in order to identify accurate and reliable findings for the delivery of quality nursing care. The Culture Care theory has an anthropological base in which the meaning and relevance of care is derived from within the context of particular cultural worldviews, values, and social structures (Leininger 1970, 1988, 2001). The understanding of these culture care meanings, expressions and patterns is essential in order for nurses to assist hospitalized patients.

This understanding or transcultural approach is foundational in providing quality nursing care that is congruent with the patient’s needs (Leininger 1984, 1990). The transcultural approach supports the maintenance of health or wellbeing, and provides meaningful living and/or dying experiences for individuals, families and groups (Leininger 1989). Thus, a transcultural approach provides a professional perspective as to what constitutes meaningful and satisfying care from the recipients of nursing care.

Understanding culture care meanings, expressions, and patterns from the recipients of care, should serve as a guide for nursing care decisions, judgments and actions. Within the Culture Care theory (Leininger 1988, 1990, 2001) nursing care decisions, judgments and actions yield three overarching purposes: (1) culture care
maintenance or preservation, (2) culture care accommodation or negotiation and (3) culture care repatterning or restructuring.

Through an ethnographic examination of the patient’s perspective, the identification of culture care meanings, expressions and patterns may yield a further understanding of the adult inpatient fall phenomena. These unidentified culture care meanings, expressions and patterns require an ethnographic methodology as described by the Culture Care theory and research methods (Leininger & McFarland, 2006). Using this theoretical framework is the most appropriate tool for ‘opening the black box’.

**Purpose for the Study**

Within the current state of the science of the inpatient fall phenomena, the examination of nursing staffing, nursing care processes such as fall risk assessment, fall prevention interventions, and contextual cultural considerations such as communication, team work, and innovation has been reported as equivocal (Tables 3, 4, 5, 6). However, the patient’s perspective inherent within the adult inpatient fall phenomena has yet to be examined. Subsequently, the constructs of culture and care inherent within the adult inpatient fall event has yet to be discovered. For example, what specific meanings, expressions, and patterns of culture and care are associated within the adult inpatient fall phenomena? Do these meanings, expressions, and patterns of culture and care vary among patients, professional nursing staff and the hospital organization? The intersection of culture care meanings, expressions and patterns among patients, nurses and hospitals represents a very complex situation. Effective translation of knowledge/science requires an examination of these intersecting culture care meanings, expressions and patterns and
their sociocultural influences. The identification of these intersecting culture care meanings, expressions and patterns and their sociocultural influences may be explanatory of the adult inpatient fall phenomena.

The purpose of the Culture Care theory (Leininger & McFarland, 2006) is to describe, interpret, explain, and predict the diversity and universality of the meanings, values, processes and structures of human care within a healthcare context. The goal of Culture Care theory (Leininger & McFarland, 2006) is to use the findings to provide culturally congruent, safe and beneficial care that is acceptable, meaningful, and satisfying to hospitalized adults. The goal of this study is to understand cultural influences within the adult inpatient fall phenomena in order to provide culturally congruent nursing care practices.

The basis for using this theory and research method is to understand the factors related to cultural stresses, biases and even ‘therapeutic’ acts as potentially caustic within these phenomena (Leininger, 2001). The very nature of current medical and nursing interventions contributes as well as mitigates adult inpatient falls (Titler, Shever, Kanak, Picone, & Qin, 2011). For example, increases in the number of medical and nursing interventions increased the odds of falling by 10% and 6%, respectively. Although this relationship may reflect the acuity of patients, use of restraints ($p = 0.1137$) and medication management for nausea ($p = 0.363$) and fluids ($p = 0.1039$) were reported as significant factors associated with adult inpatient falls (Titler et al., 2011). A transcultural approach provides a broad comparative picture of human nature and behavior thus preventing ethnocentrism. Ethnocentrism tends to dominate in the industrialized western
world, and undoubtedly applies to healthcare professionals within the hospital organization. Most nursing concepts and practices are based upon American middle class norms and values. These values and actions may not be meaningful or helpful to the adult inpatient. Perhaps the adult inpatient fall phenomena may be the result of incongruent culturally based care within the hospital setting.

**Summary**

The overarching theme to the current state of the science implies that there is something else, something unknown, regarding the phenomenon of inpatient falls. The current state of the science has not fully explained reducing inpatient fall rates by the structure variable of nurse staffing, the use of fall risk assessment scales, or preventative measures such as staff education, bed alarms or wrist bands. Although these strategies are not efficacious, these interventions are not “directly harmful” (Clyburn & Heydemann, 2011). The evidence is equivocal, and therefore not surprisingly, adult inpatient fall rates remain a constant and consistent problem (Table 2). Thus, the occurrence of adult inpatient falls remains a phenomenon to be studied. In fact, the equivocal state of inpatient fall research leads to methodological questioning.

Issues affecting the translation and application of nursing science include contextual considerations such as organizational and staff characteristics (Cummings, Estabrooks, Midozi, Wallin, & Hayuk, 2007; Rycroft-Malone et al., 2004; Titler, 2010). However, the patients’ voice is excluded from most of the current literature. Indeed, more research inclusive of the patient’s perspective may be a more true measure of translation knowledge/science. This concept mirrors national safety trends and terms such as ‘patient
centered care’. Healthcare safety experts request the next phase of translation knowledge /science research to ‘elicit patient perspectives within the bounds of culture and care’ (Rathert, Huddleston & Pak, 2011; Sakalys, 2003).

Despite a long professional history of concern and the subsequent preponderance of research, inpatient falls remain a serious problem for patients, their families, healthcare providers especially nurses, as well as hospitals. The conceptualization of inpatient falls as sensitive to nursing care has catapulted NSQO research into the national quality and safety agenda for healthcare services. And yet, despite the equivocal evidence regarding the structure variable of nurse staffing, three commonly used fall risk assessment scales and the multitude of fall prevention strategies, inpatient fall rates have remained a persistent, albeit constant problem. For example, in large NSQO databases such as CalNOC with 196 participating hospitals, rates of inpatient falls have remained stable for seven years (Table 2). Although these rates have not decreased, more importantly, inpatient fall rates have not increased as well.

Opening the black box is essential to understanding inpatient falls. The gaps in the scientific literature point to the need to further explicate nursing care processes. This understanding of ‘what happens’ is dependent upon a level of analysis at the smallest measure; when nursing care is provided or not. Haines, Hill, Walsh, and Osborne (2007) and Myers and Nikoletti (2003) reported comparable accuracy between inpatient fall risk assessment scales and nursing staff clinical judgment thus signaling the importance of nursing care processes in relation to the science of inpatient falls.
The state of the science regarding the efficacy of fall risk assessment scales to accurately measure and predict inpatient fall risk, require additional validity and reliability testing of the most commonly used inpatient fall risk assessments scales. Since the definition of a medical errors is ‘a failure due to either correct actions not proceeding as intended or intended actions are not correct’ (Reason, 1990), the administration of medications can be described as ‘correct or intended actions’ within the care of hospitalized patients. Given what is known about medication side effects such as alterations in elimination and cognition, perhaps the addition of specific medications as risk factors would add to the validity and reliability of these fall risk assessment scales. In addition, research is needed regarding the frequency of using these inpatient fall risk assessment scales. Although the recommended frequency of use includes directives such as ‘upon admission’ and with ‘any changes’ of a patient’s condition, studies to date have not included frequency as an independent variable on the main outcome of adult inpatient fall rates.

The equivocal evidence associated with the current state of the science serves as the basis for this study. Further, the following gaps in the literature have been identified: (1) limited studies regarding translational science and its efficacy to reduce inpatient falls, (2) limited qualitative studies examining patient and nurse perspectives, and (3) limited studies guided by an appropriate theoretical framework for understanding the adult inpatient fall phenomena.
CHAPTER THREE

METHODOLOGY

Leininger (1990, 1997) developed a specific methodology to explicate phenomena of interest to nurses. This specific methodology is called the ‘ethnonursing’ research method. The derivation of ‘ethno-’ is Greek, and means, ‘of the people’ (Webster’s, 2011). The term ethnonursing was developed in relation to the Greek word ethos, and the word nursing, which reflects a research focus on nursing phenomena concerned with the humanistic and scientific aspects of human care, well-being, and health in different environmental and cultural contexts (Leininger, 2001). Interestingly, Spradley (1979), a well known researcher using ethnographic methods and Leininger were doctoral colleagues at the University of Washington. Thus, the ethnonursing research method is consistent with ethnography, although specific to the discipline of nursing (Leininger, 2001).

Derived from the qualitative paradigm, the ethnonursing research method (Leininger, 1990, 2006) allowed for the discovery of the meanings, expressions, and patterns of cultural care from the views and values of insiders—the ‘emic’ perspective. This approach to the phenomena of adult inpatient falls permitted the patient’s point of view which was then compared with the ‘etic’ perspective—that of outsiders reflecting more universal views and values. Emic or local information served as a baseline of knowledge, in contrast with etic explanations of the adult inpatient fall phenomena.
By comparing emic and etic perspectives, universal and diverse care meanings, expressions, and patterns were discovered. Knowledge development in the ethnonursing research method is “grounded in people as knowers” (Leininger, 1988 p. 84).

Ethnonursing is a qualitative research method used to discover people’s experiences and care meanings that are based on their beliefs and values. Cultural care meanings and practices are embedded within social structures (Leininger, 1984, 1988, 1990; Speziale & Carpenter, 2007). Context and values are the differentiating factors as to the way care is expressed, valued and practiced. Leininger (1988, 1997, 2001) developed several ‘enablers’ for the examination of culture care data specific to nursing phenomena. These enablers were useful for the discovery of cultural influences affecting health and wellbeing within the hospital setting.

The ethnonursing research method (Leininger & McFarland, 2002, 2006) incorporated the following sequential steps to guide this study:

1. State the domain of inquiry (DOI).
2. Identify select research questions.
3. State the assumptive premises about studying the DOI in relation to Culture Care theory.
4. State the orientational definitions of the study in relation to Culture Care theory.
5. State the study’s purpose and goals.
6. Select and describe key and general informants with selection criteria.
7. Select and describe enablers.
Domain of Inquiry (DOI)

The following domain of inquiry statement (DOI) was associated with this study: Culture care meanings, expressions, and patterns related to adult inpatient falls. Because the DOI is narrowly focused, this study is defined as a mini ethnonursing study (Leininger, 2006). A mini ethnonursing study is classified by the scope and breadth of the DOI. This study’s narrow focus of the adult inpatient fall phenomena meets this criterion. The number of participants recommended for an ethnonursing research study is based upon a ratio of 1:2 (Leininger, 2006, p. 75). Therefore, the recommended number of participants for this mini ethnonursing study is six to eight key informants and 12 to 16 general informants.

DOI Research Questions

The following research questions specifically guided this study: What are the culture care meanings, expressions and patterns associated with adult inpatients falling within the hospital setting? In what ways do social structure factors and context influence these meanings, expressions and patterns? In what ways do culture care meanings, expressions and patterns influence health and wellbeing of adult inpatients who fall within the hospital setting?

Assumptive Premises

Five assumptive premises derived from the Culture Care theory (Leininger 1988, 1997, 2001) undergird the purpose and conceptualization of this study. These assumptions served as a guide for the discovery of culture care meanings, expressions,
and patterns related to adult inpatient falls. The following assumptive premises were associated with this study:


2. Cultural meanings, expressions, and patterns of care can be identified within the hospital setting and reflect diversities (differences) and commonalities (universalities) (Leininger & McFarland. 2002, p. 79).

3. Culture care for the adult inpatient experiencing a fall are influenced by social structure factors such as language, philosophy of life, kinship, politics, economics, education, technology, and the environmental context (Leininger & McFarland. 2006, p. 14).

4. Culturally congruent and beneficial nursing care can only occur when the culture of adults experiencing a fall while hospitalized are known and explicitly used for appropriate, safe, and meaningful care (Leininger & McFarland. 2006, p. 15).

5. The ethnonursing research method provides an important means to accurately discover and interpret ‘emic’ and ‘etic’ complex and diverse inpatient culture care data (Leininger & McFarland. 2002, p. 79).

**Orientational Definitions**

Definitions were developed to provide a broad orientational research focus to discover the culture care of adults experiencing a fall while hospitalized. These definitions were not used rigidly but rather as an approach to the DOI to generate emic
and etic perspectives. Derived from the Culture Care theory (Leininger 1988, 1997, 2001), the following orientational definitions were associated with this study:

1. *Culture care* refers to the synthesis of two major constructs, culture and care, that explains and accounts for adults experiencing a fall while hospitalized (Leininger & McFarland. 2006, p. 18).

2. *Context* refers to the totality of the inpatient fall event including the environment (physical, geographic, and social structure factors) that explain meanings, expressions, and patterns of care (Leininger & McFarland. 2006, p. 15).

3. *Culture care meanings* refers to values and beliefs related to the inpatient fall event (Leininger, 2006).

4. *Culture care expressions* refers to words and actions related to the inpatient fall event (Leininger, 2006).

5. *Culture care patterns* refers to experiences and behaviors related to the inpatient fall event (Leininger, 2006).

6. *Cultural lifeway* refers to culturally informed experiences and behaviors of adults (Leininger, 2006).

7. *Culture care diversity* refers to cultural variabilities or differences in care beliefs, meanings, patterns, values, symbols or lifeways, within and between cultures (Leininger & McFarland. 2002, p. 83).

8. *Culture care universality* refers to cultural commonalities or similarities in care beliefs, meanings, patterns, values, symbols or lifeways, within and between cultures (Leininger & McFarland. 2002, p. 83).


11. *Inpatient fall* refers to an unplanned descent to the floor of a patient within the hospital setting (Federal Register, 2009; National Quality Forum, 2004).

12. *Culture care preservation or maintenance* refers to those assistive, supportive, facilitative, or enabling professional actions and decisions that help people of a particular culture to retain and/or maintain meaningful health outcomes (Leininger & McFarland. 2002, p. 84).

13. *Culture care accommodation or negotiation* refers to those assistive, supportive, facilitative, or enabling creative professional actions and that help people of a designated culture to adapt to, or negotiate with, others for meaningful, beneficial, and congruent health outcomes (Leininger & McFarland. 2002, p. 84).

14. *Culture care repatterning or restructuring* refers to those assistive, supportive, facilitative, or enabling professional actions and decisions that help patients reorder, change, or modify their lifeways for new, different, and beneficial health outcomes (Leininger & McFarland. 2002, p. 84).

15. *Cultural congruent (nursing) care* refers to the explicit use of those assistive, supportive, facilitative, or enabling professional acts and decisions in sensitive, creative, and meaningful ways to fit the needs of patients for beneficial and satisfying health outcomes (Leininger & McFarland. 2002, p. 84).
Purpose/Goal Statements

Based upon the Culture Care theory (Leininger 1988, 1997, 2001), the purpose of this study was to discover, describe and systematically analyze culture care meanings, expressions, and patterns of adult inpatients that have fallen. This research focus was designed to discover the adult inpatient’s fall experience within the hospital context and systematically analyze the meanings, expressions, and patterns of care.

Based upon the Culture Care theory (Leininger 1988, 1997, 2001), the goal of this study is to use these findings to provide culturally congruent nursing care that is sensitive, creative, and meaningful in order to meet the needs of hospitalized adults.

Sample Characteristics

Multiple sources of information were collected through observation, informal conversations, interviews and field notes. These data collection methods allowed for information to emerge, in order to discover culture care meanings, expressions, and patterns related to adult inpatient falls. The location of this study was a large academic medical center located in the mid-west of the United States. The medical center is a 570 licensed bed facility that includes a level one trauma center, a burn center, as well as an aero-medical program for patient transport from a range of 150 miles. The center is a recognized leader in providing specialty and primary care health services, including the American Nurses Credentialing Center’s Magnet designation. The organization has a long established hospital wide inpatient falls committee. In 2010, the committee implemented the Johns Hopkins Fall Risk Assessment Tool (Poe, Cvach, Dawson, Straus
& Hill, 2007) within the organization’s electronic information system. All key informants were measured at low, medium, or high risk for fall risk via this tool.

Eight key informants and 16 general informants participated in this study based on the recommendations for a mini ethnonursing study (Leininger 2006). Data collection continued for five months at which point data saturation was achieved. The study was reviewed and approved by the organization’s Institutional Review Board (IRB), Nursing Research Council, Associate Chief Nurse, Risk Manager, and Quality Control Manager.

**Key Informants**

Key informants, as defined within the ethnonursing research method, were selected on the criteria of having the most knowledge about the DOI (Leininger, 2006). Thus, key informants were adult inpatients that experienced a fall while hospitalized. The inclusion criteria included the following: (1) cognitively intact, (2) English speaking and reading, (3) able to give consent, (4) over the age of 18 years, and (5) fell within the previous 24 to 72 hours during their acute care hospital stay. Patient falls occurring in areas other than acute care such as emergency, obstetrics and rehabilitation were not included. Confused, cognitively impaired, or mentally incompetent key informants were also excluded.

Participant recruitment came from referrals from the hospital’s quality control manager. Patients meeting the selection criteria were contacted and the purpose of the study was explained. This occurred before hospitalization ended. After consenting to participate, all key informant interviews occurred within the hospital setting within 24 hours of the fall event. Interviews were conducted during the hours of 0900 to 2100,
seven days a week. These interviews were based upon the convenience of the patient including time and location, in order not to disrupt their daily routines.

Self reported data was collected from the participants during the interview process. In order to maintain the confidentiality of key informants, each was given a number for data entry, analysis and discussion purposes. The eight key informants were assigned consecutive numbers based on the order of enrollment in the study. Figure 4 is derived from and describes the study’s enrollment process and results.

Figure 4: Key informant enrollment results.

<table>
<thead>
<tr>
<th>Adults aged &gt; 18 Y</th>
<th>Excluded from study (N 20)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-English speaking (N 5)</td>
</tr>
<tr>
<td></td>
<td>Neurologically compromised (N 15)</td>
</tr>
<tr>
<td></td>
<td>Hospital unit other than acute care (N 5)</td>
</tr>
<tr>
<td>Eligible for study (N 22)</td>
<td></td>
</tr>
<tr>
<td>Discharged home (N 7)</td>
<td></td>
</tr>
<tr>
<td>Invited to join (N 15)</td>
<td></td>
</tr>
<tr>
<td>Declined (N 7)</td>
<td></td>
</tr>
<tr>
<td>Accepted (N 8)</td>
<td></td>
</tr>
</tbody>
</table>

Therefore, adult inpatients that fell during their hospital stay were identified as K1 through K8. Studies identified age, gender and medications as important characteristics associated with adult inpatient falls (Cameron et al., 2010; Currie, 2008; Enloe et al., 2005; Fischer et al., 2005; Healey et al, 2008; Hitcho et al., 2004; Muller et al., 2009;
Therefore, the following demographic data was collected from the patient’s medical record: (1) age, (2) gender, (3) fall risk assessment, (4) fall prevention interventions, (5) medical diagnosis, and (6) list of medications. The key informant data set included an average age of 57 years old, mostly female (63%), with the fall event occurring in the early morning (50%). Participant diagnoses included cardiac, respiratory and gastrointestinal disorders with similar medication regimens. Table 7 provides a summary of the key informants’ ethno-demographic results.

**General Informants**

General informants, as defined within the ethnonursing research method, were selected on the criteria of having knowledge specific to the DOI (Leininger, 2006). Thus, general informants were registered nurses knowledgeable about the key informant’s fall event. The inclusion criteria includes the following: (1) cognitively intact, (2) English speaking and reading, (3) able to give consent, (4) over the age of 18 years, and (5) matched to the adult inpatient fall event.

General informant recruitment came from the unit’s nurse manager as well as recommendations and referrals of the nursing staff. After meeting the selection criteria, general informants were contacted and the purpose of the study was explained. After consenting to participate, all general informant interviews occurred within the hospital setting. Interviews were conducted during the hours of 0900 to 2100, seven days a week. These interviews were based upon the convenience of the staff nurse including time and location, in order not to disrupt their daily routines.
Self reported data was collected from the general participants during the interview process. In order to maintain the confidentiality of general informants, each was given a number for data entry, analysis and discussion purposes. The general informants were also assigned consecutive numbers, based on the order of enrollment. Nurses that had direct knowledge about the key informant’s inpatient fall event were identified as ‘a’ and ‘b’. For example, the general informants that had direct knowledge about key informant one were identified as G 1a and G 1b. The general informants that had direct knowledge about key informant two were identified as G 2a and G 2b. This sequential assignment continued for all 16 general informants and ended with G 8a and G 8b as confidential identifiers. Studies identified higher levels of nurse education as an important characteristic associated with NSQO (AHRQ, 2007; Aiken et al., 2003). Therefore, the following demographic data was collected from the participants: (1) age, (2) gender, (3) years of professional nursing experience, and (4) level of education. The general informant data set included an average age of 35 years old, mostly female (88%) with a baccalaureate nursing degree (70%). Table 8 provides a summary of the general informants’ ethno-demographic results.

**Data Collection**

The ethnonursing research method provides specific ‘enablers’ for inquiry (Leininger 1988, 1997, 2001). Enablers were developed to discover data particular to the DOI. The Sunrise Model, the Acculturation Health Care Assessment enabler, and the Observation-Participation-Reflection enabler were used for this mini ethnonursing study.
The Sunrise Model

The Sunrise Model served as a research guide or cognitive map, depicting a holistic perspective of multiple factors influencing culture and care (Appendix B). The Sunrise Model symbolizes the ‘rising of the sun’ to represent care as ‘light to the word’ and presents culture care as a full and total perspective of the essence of nursing (Leininger & McFarland, 2002). In this visual model, the arrows point to the multiple forces influencing the care of individuals, families, groups and institutions. The upper part of the model shows the worldview and social structures such as religious, philosophical, political, legal, economic, kinship, education, technology, and cultural values, beliefs, and lifeways as important components requiring examination through language and environmental contexts. In the lower part, the folk and professional contexts are depicted. Individuals, families, and groups are influenced by these health contexts which require further examination in order to determine appropriate nursing decisions, judgments and actions in providing congruent care to individuals, families, and groups within institutions.

Benefits associated with the use of the Sunrise Model as a visual guide are reported as essential to the ethnonursing research method (Leininger & McFarland, 2006). Several studies reported the discovery of ‘hidden and unexpected factors’ influencing care meanings, expressions, and patterns through the use of the Sunrise Model (Hubbert, 2006; McFarland, Mixer, Lewis, & Easley, 2006; McFarland & Zehnder, 2006). For example, the term ‘intervention’ frequently used and applied as nursing intervention and/or medical intervention was identified as an ethnocentric
characteristic (Leininger, 2006; McFarland & Zehner, 2006). This term represents ‘only the professional knows best’, and may interfere with the patient’s views, needs and values associated with their emic definitions of caring.

The Sunrise Model was used as the researcher’s visual guide for inquiry. A hardcopy of this enabler was kept with the researcher for review and served as a cognitive map for the generation of key and general informant questions. The Sunrise Model enabler served as a useful guide for the discovery of factors influencing culture care meanings, expressions, and patterns associated with the adult inpatient fall phenomena. Thus, the statement of ‘let the sun shine and rise’ most vividly described the purpose and meaning of the Sunrise Model as an effective ethnonursing research method enabler (Leininger, 1988, 1997, 2001).

**Acculturation Health Care Assessment Enabler**

The Acculturation Health Care Assessment enabler offered a systematic assessment of a patient’s ethno history, social structure factors such as religious, philosophical, political, legal, economic, kinship, education, technology, and cultural values, beliefs, and lifeways (Appendix C). This enabler was used as a guide for interviewing key informants. This enabler was not given to the participant, but rather used by the researcher to provide a holistic profile of culture care meanings, expressions and patterns associated with the adult experiencing a fall while hospitalized. The goal of this data collection method was to allow key informant information to emerge. This enabler provided the researcher with the emic data needed for analysis of the adult inpatient fall phenomena. A field journal was used to record informant demographics and
observations within 24 hours. All interviews with key informants was digitally recorded and transcribed within 24 hours.

**Observation-Participation-Reflection Enabler**

The Observation-Participation-Reflection enabler was used as a guide to obtain focused observations of general informants within their natural and familiar work environment (Appendix D). This enabler provided the researcher with a step wise approach to help ensure a sound data collection process (Leininger & McFarland, 2002). First, the researcher maintained a focused observation within the work environment of the hospital. This initial phase included introductions of the researcher to the staff, including explanations of the researcher’s purpose and role. These introductory meetings took place repeatedly, over several weeks.

Next, the researcher moved into the participation phase interviewing general informants about the DOI. The participation phase occurred over several months, and focused on broad queries related to the adult inpatient fall phenomena. General informants were queried as to their personal accounts and description of the adult inpatient fall. Additionally, queries included questions to elicit opinions regarding fall risk and prevention within the hospital setting. The goal of this data collection method was to allow general informant information to emerge. Lastly, the researcher reflected on the data collected.

The Observation-Participation-Reflection enabler allowed each step of the data collection process to build upon the other. This enabler served as a valuable guide for obtaining detailed data regarding the hospital context. Data included contextual issues
such as the totality of the physical surroundings including design characteristics, equipment, and technology, use of fall risk assessment scales, or other prevention protocols, as well as sociocultural factors such as interactions with and between general informants. This enabler provided the researcher with the etic data needed for analysis of the adult inpatient fall phenomena. The purpose of this enabler was to obtain detailed data about the DOI from the etic perspectives of the hospital staff and context. A field journal was used to record informant demographics and observations within 24 hours. All interviews with general informants were digitally recorded and transcribed within 24 hours.

**Data Analysis**

Over 500 pages of data were transcribed from interviews with key and general participants. In addition, data from field observations were recorded in a 50 page field journal. This data described the social – cultural context and was useful for reflection on field observation experiences.

All interview and observation data from key and general informants were computer processed, coded and categorized using the software program, Ethnograph v6.0 (Qualis Research, 2006). At the conclusion of each session, audio recordings were transcribed by a hired transcriptionist. All personal identifiers were removed from the data and a subject/interview code was assigned to protect confidentiality, yet allow for potential follow-up interviews. All transcriptions were verified by listening to each interview in order to establish accuracy. Subsequently, the transcripts were uploaded as ‘word files’ into the Ethnograph v6.0 qualitative software package. This computer
program is designed to handle large amounts of qualitative data collected during ethnographic research. Word file transcripts were analyzed and coded by the researcher. The Ethnograph v6.0 software program allowed for the tabulation of codes, the search for more frequently coded words as well as retrieve the narrative passages describing the coded words. The selected verbatim descriptor codes were then categorized into patterns.

Leininger’s (2006) Data Analysis Guide with the four phases of analysis for ethnonursing qualitative research data was used (Appendix E). This guide provided a systematic method for data analysis, with each phase of analysis built on the previous phase. The analysis began with collection and documentation of raw data from observation and interviews, followed by coding and categorizing of the raw data. Subsequently, pattern identification was based upon the analysis of the coded categories, which consequentiy terminated with theme abstraction derived from the analysis of the previously identified patterns. A separate analysis of the key and general informant’s data was initially conducted through phases one, two, and three. Pattern identification and contextual analysis of each group was compared. In phase four, themes of behavior and other summative findings were identified. Phase four analysis included synthesis and interpretation of major themes, theoretical formulations and recommendations. All final analysis themes therefore, are substantiated from the raw data. Each phase of analysis built on and supported previous analytical phases in order to obtain accurate findings. Data analysis completed in this systematic way yielded credible and meaningful findings reflective of the DOI and research questions (Leininger, 2006).
Ethical Considerations

Ethical considerations included the protection of the participants by obtaining informed consent, maintaining confidentiality, and the handling of sensitive material. This study was reviewed and approved by the organization’s Institutional Review Board (IRB). The informed consent process included verbal consent for participation, including no coercion, no penalty for withdrawing, as well as respect for the rights and confidentiality of all participants throughout the study. Upon contact with all potential participants, the researcher reviewed the procedures for participating in the study and conducted a screening confirming that potential informants were willing to participate. The study’s protocol flyer and researcher’s business card was provided to all participants during the informed consent process (Appendix A).

To maintain confidentiality and anonymity, a unique code number was used for identification for all data files. All informant interview recordings, transcripts, and field journal notes were protected via a locked file cabinet. All computer data was password protected on the researcher’s personal computer, as well as backed up via a password protected flash drive. Data was analyzed and reported in the aggregate.

Evaluation Criteria

Since the purpose of this research study was to discover, describe and systematically analyze culture care meanings, expressions, and patterns of the adult inpatient fall phenomena, criteria to evaluate the findings were based upon the qualitative paradigm. Criteria for evaluating qualitative data are based on Guba & Lincoln (1994) as well as Leininger (2006). The qualitative evaluative criteria include credibility,
confirmability, meaning-in-context, recurrent patterning, saturation, and transferability. Credible, confirmable and meaning-in-context findings were supported through observation and direct information from key and general participants within the hospital context. Recurrent patterning was established by the repeated care patterns associated with the adult inpatient fall event. Saturation occurred when the participant data reflected redundancy of information over the duration of the five month study. Transferability of the findings was supported within current literature, and may be applicable to other similar hospital settings. Further discussion of these criteria is reported in Chapter Five.

In order to establish the trustworthiness of this study, these evaluative criteria were addressed through the following strategies:

1. Interview transcriptions were verified by listening to each interview in order to establish accuracy.

2. A data trail was developed by uploading transcripts into the Ethnograph v6.0 qualitative software package, with word file transcripts analyzed and coded and the selected verbatim descriptor codes categorized into patterns inclusive of narrative passages.

3. Data was collected through observation, interview, and participation within the context of the hospital setting.

4. A comparative perspective of diversities and universalities within emic and etic findings was substantiated from the raw data.

5. A personal research journal was used for the recording of ideas, reflections, processes, and direction of the research during the length of the study.
**Summary**

The ethnographic theoretical framework of the Culture Care theory (Leininger 1990, 2006) was an appropriate tool for ‘opening the black box’ in order to identify contributory issues associated within the adult inpatient fall phenomena. The rationale supporting use of this methodology was four fold:

1. The most appropriate method for examining culture and care was an ethnographic qualitative method.
2. The efficacy of the translation of knowledge/science required the inclusion of the patient’s perspective.
3. The identification of intersecting culture care values and expressions with their respective sociocultural influences explained the adult inpatient fall phenomena.
4. Use of these findings will enable the provision of culturally congruent nursing care of hospitalized adults.

This specific methodology is called the ‘ethnonursing’ research method and provides specific ‘enablers’ for inquiry (Leininger, 1990, 2006). This study’s narrow focus of the adult inpatient fall classifies it as a mini ethnonursing research study. Derived from the qualitative paradigm, use of the mini ethnonursing research method (Leininger, 1990, 2006) allowed for the discovery of the meanings, expressions, and patterns of culture care from the insiders or ‘emic’ perspective. The Acculturation Health Care Assessment enabler was used as a guide for interviewing key informants (Appendix C). This enabler provided the researcher with the emic data needed for analysis of the adult inpatient fall phenomena. The research focus of this study was to discover, describe
and systematically analyze care meanings, expressions, and patterns of adult inpatients that have fallen within the hospital context.

The Observation-Participation-Reflection enabler (Leininger, 1990, 2006) was used as a guide to obtain detailed data regarding the hospital context. Data included contextual issues such as the totality of the physical surroundings including design characteristics, equipment, and technology, use of fall risk assessment scales, or other prevention protocols, as well as sociocultural factors such as interactions with and between general informants. This enabler provided the researcher with the etic data needed for analysis of the adult inpatient fall phenomena (Appendix D).

This approach to examining the phenomena of adult inpatient falls permitted the patients point of view which was then compared with the ‘etic’ or outsiders or more universal perspective. Emic or local information served as the baseline of knowledge, in contrast with etic or more universal views. By comparing emic and etic perspectives, universal and diverse care meanings, expressions and patterns were discovered regarding the adult inpatient fall phenomena.

Based upon the Culture Care theory (Leininger 1990, 2006), the goal of this study is to use these findings to provide culturally congruent nursing care that is sensitive, creative, and meaningful in order to meet the needs of hospitalized adults. The Sunrise Model enabler was used as a research guide or cognitive map (Appendix B). This enabler depicts a holistic perspective of multiple factors that can influence care and the wellbeing hospitalized patients and presents culture care as a full and total perspective of the essence of nursing (Leininger & McFarland, 2002).
CHAPTER FOUR
PRESENTATION OF FINDINGS

The ethnographic theoretical framework of the Culture Care theory (Leininger 1990, 2006) provided an appropriate tool for ‘opening the black box’ associated with the adult inpatient fall phenomena. The research purpose of this study was to discover, describe and systematically analyze care meanings, expressions, and patterns of adult inpatients that have fallen within the hospital context. This methodology allowed for the discovery of culture care meanings or values, expressions or knowledge, and patterns of behaviors associated with the adult inpatient fall event. The discovery of these intersecting culture care values and expressions along with their respective sociocultural influences was explanatory of the adult inpatient fall phenomena.

The analysis of the ‘black box’ contents from an airplane crash site is essential to understanding ‘what happened’. Inpatient falls can literally be interpreted as a patient crash within the hospital setting. Understanding ‘what happened’ with the inpatient fall crash was discovered through the ethnonursing research method. This method provided the tools necessary for the examination of culture care meanings, expressions, and patterns associated within these phenomena. These discoveries revealed culture care themes within the adult inpatient fall event. The following research questions guided this study:
1. What are the culture care meanings, expressions and patterns associated with adult inpatients falling within the hospital setting?

2. In what ways do social structure factors and context influence these meanings, expressions and patterns?

3. In what ways do culture care meanings, expressions and patterns influence health and wellbeing of adult inpatients that fall within the hospital setting?

The culture care themes and their sociocultural influences associated with the adult experiencing a fall while hospitalized are presented. Themes were generated using the ethnonursing method and were derived from adult inpatients that fell during their hospital stay (emic) as well as from nursing staff that had direct knowledge about the inpatient fall event (etic). Two universal themes and one diverse theme and their respective sociocultural influences were abstracted from participant descriptors and patterns. The three themes reflect the similarities and differences of culture care related to adults experiencing a fall while hospitalized:

- **Universal Theme I:** Culture care of adults experiencing a fall while hospitalized included blaming, motivated by self care despite their vulnerability during illness in order to maintain health and wellbeing and was influenced by cultural lifeways, philosophical factors and kinship/social factors.

- **Universal Theme II:** Culture care of adults experiencing a fall while hospitalized involved mitigating risk in order to promote health and wellbeing and was influenced by educational and technological factors, and environmental context.
The Diverse Theme: Culture care of adults experiencing a fall while hospitalized meant experiencing diversity in the efficacy of staffing patterns and was influenced by economic factors, kinship/social factors and political/legal factors.

In summary, adult inpatient falls are quite literally, a ‘patient crash’. General informant data revealed hearing the patient crash as a ‘loud noise’, ‘bang’ and ‘thud’, as reported in the following descriptors:

G 1b: And two other nurses were going to go give some meds, I don’t know, they were doing something down the hallway and they heard, well they told me they heard, like this loud noise, and then I saw the call light on and it was my patient’s room and they were like, ‘oh, can you come help’? So I went over there and it turns out it was my patient that fell (p. 2, lines 0045-0054).

G 2a: So, we were sitting in the nurse’s station and, you know, there is construction going on the floor below us so you hear all these bangs and booms all the time. This one sounded very, very close. So one of the techs went to go see what was going on and she called for some help, so I saw that he was on the floor (p. 2, lines 0047-0055).

G 4b: I was trying to stock supplies in the hallway and then I heard a ‘thud’ and I thought, ‘I’m very familiar’. ‘Oops’, I said to my co-worker that is beside me is asking for my help for another patient. I said, ‘oops that’s a fall, come on help me’ so we went there. He was lying like on the left side (p. 2, lines 0038-0047).

**Culture Care Themes**

Culture care themes were discovered from the raw data, categorical descriptors and patterns identified by the researcher. The culture care themes were discovered, confirmed and evaluated by the credibility, confirmability, meaning-in-context, recurrent patterning, and saturation of the data. Two universal and one diverse culture care themes were discovered in this ethnonursing study related to the research questions. Universality refers to the commonalities or similarities in care beliefs, meanings, patterns, values, symbols or lifeways. Thus, universal themes were identified based upon the recurrent,
observed and expressed commonalities and similarities among the participants. Diversity refers to the variabilities or differences in care beliefs, meanings, patterns, values, symbols or lifeways. Hence, the diverse theme was broadly reported but revealed recurrent, observed and expressed variabilities and differences among the participants. Table 9 provides a summary of the study’s findings using the Culture Care theory (Leininger 1988, 2001).

Each theme is presented along with supporting pattern data. Metaphors are useful in order to paint a picture. Therefore, the following results are described with well known aviation terminology in order to metaphorically ‘paint a culture care picture’. Data notations are delineated from participant transcript pages, as well as Ethnograph lines from each data file.

**Universal Culture Care Theme I**

Culture care of adults experiencing a fall while hospitalized included blaming, motivated by self care despite their vulnerability during illness in order to maintain health and wellbeing and was influenced by cultural lifeways, philosophical factors and kinship/social factors.

Verbatim descriptors were carefully analyzed to discover meanings, expressions, and patterns of behavior. The culture care patterns for Theme I were identified from participant observation, recurrent categorized descriptors, and raw data. Two patterns underpinning Theme I were discovered from observations, descriptors, and raw data: 1a) adults experiencing a fall while hospitalized included blaming, motivated by self care,
and the ‘autopilot’ pattern; and 1b) adults experiencing a fall while hospitalized involved vulnerability during illness and the ‘caged animal’ pattern.

**Care pattern 1a: Blaming, motivated by self care.** Adults experiencing a fall while hospitalized included blaming, motivated by self care, and the ‘autopilot’ pattern. Key informants blamed themselves. The following descriptors depict this pattern:

K 2: I am so sorry. I am so sorry I fell and caused a rucus (p. 21, line 0732).

K 3: It happened and I don’t fault anybody but myself (p. 2, line, 0209).

K 4: It was my stupidity that made me fall down (p. 12, line 0394).

K 5: I’m a crazy old lady that doesn’t listen. I mean, I was determined to walk to the bathroom. You know, and I just got too cocky (p. 13, line 0480).

K 6: I need to pay more attention. I thought I was all the way on the bed, sitting on the bed, but I was like half on the bed and half off. It wouldn’t happen if I paid more attention and get help (p. 8, lines 0279-0289).

K 8: Yeah, stupid thing to do. I realize that. I had no business doing it. I thought I could make it (p. 10, line 0347-0349).

Key informants may have blamed themselves due to the repeated reminders ‘to call’ the staff. General informant data revealed the repetitive nature of these reminders. In the following data, the general informant reported ‘to call’ three times:

G 7b: I always say, ‘do you want to get up to go to the bathroom now while I’m here’ and if not, ‘okay, call me when you’re ready, please you’re ready to get up, please call me, call me, call me’. I always say that and place the call light right next to them and remind them that the big red button calls us so, ‘if you need anything, let us know’ (p. 6, lines 0243-0251).

The frequency of reminding patients ‘to call’ was described as ‘saying it over and over again’ as the following general informant reported:
G 8b: Like every single time, ‘call if you need something, I will come and help you’. Every single time you’re in there saying it over and over and over again, ‘call, call, call’ (p. 12, lines 0491-0496).

Due to the repetitive nature of these reminders, it is understandable key informants blamed themselves. However, the emphasis of these reminders affected professional care/caring for hospitalized patients. Participant data described the following additional negative outcomes: (1) angry staff, (2) restricted use of the bathroom, and (3) scared patients. For example, data from a key informant described staff ‘as angry’ when not ‘called’:

K 2: I mean they have gotten angry because I didn’t call and tell them something you know and I don’t blame them it’s their job and they want to do a good job (p. 19, lines 0659-0664).

Data from a key informant included ‘I wasn’t supposed to go to the bathroom’: 

K 5: I had taken my shower and I was sitting here and I decided I had to go to the bathroom and I had been doing it on my own even though I guess I wasn’t supposed to. But I was walking pretty good, you know (p. 2, lines 0055-0061).

Data from a general informant included ‘scared to move’ and ‘doesn’t trust herself’:

G 5a: She definitely scared herself more than anything else. She was scared to move around and do anything after that fall, because she didn’t trust herself anymore (p. 11, lines 0469-0473).

General informant data revealed frustration associated with the inpatient fall events. These frustrations included descriptions about non–compliance and uncooperativeness. These descriptions however, indicated a clear message of blame. General informant data revealed messages of blame as patient’s ‘not calling’ and ‘purposefully not cooperating’. This pattern is noted in the following descriptors:
G 1b: Oh crap, that’s my patient! What the hell, ‘why didn’t you call’! That’s what I first thought of. I was like, ‘I was here the whole time at the desk by the call light’ (p. 7, lines 0260-0265).

G 3b: When they’re noncompliant and don’t cooperate and they fall, I kind of feel angry. Not at the patient per se, but just the whole action of, I wish if they would have just called or if they just would have waited or whatever the reasoning may be. I feel like it could have been prevented and they purposefully, not purposefully, but, it happened because they didn’t cooperate with our whole falls thing so we could have prevented it and now we're dealing with, you know, potential problem issue or injury or whatever it may be (p. 7, lines 0258-0277).

G 5a: We all assisted her to the bed. We notified the primary service. They came and assessed her and then I asked her once it had settled down a little bit, because I didn’t want the first question out of my mouth to be, ‘why didn’t you call for help’. So it was, ‘did you call for somebody to help you to the bathroom’ (p. 2, lines 0051-0060).

These descriptors revealed a type of blame game, the basis of which comes from self care activities. Self care activities such as picking items up from the floor and walking to the bathroom were described by participants. These self care activities can be described in terms of the ‘autopilot’ position or doing things without thinking or ‘automatically’. The following descriptors depict this pattern:

K 1: So anyway, I was by the bed and looking for the call button. I saw it on the floor so I reached down there to pick it up. When I started to pick it up, I slipped and came down (p. 2, lines 0041-0045).

K 4: Instead of calling for help I went down and tried to pick them up myself. Instead of waiting for someone to come in and ask them to pick it up for me, I tried to go down and pick it up (p. 2, lines 0054-0056).

K 5: I mean, I was determined to walk to the bathroom. I mean if she had been in here in that moment she would have said, you know, ‘I'll help you’, and I know that and I just wanted to do it myself (p. 14, lines 0488-0493).

This ‘autopilot’ position was also reported by general informants. In their descriptors, general informants described being on ‘autopilot’ as ‘not wanting to bother’ and ‘doing it on their own’. This pattern is noted in the following descriptors:
G 6a: Yeah and I don’t know if the patient just had a momentary lapse of good judgment, if she was just impulsive for that moment. If she didn’t want to bother the nurse, why does she not want to bother the nurse? Is there a problem with that? Was she just being overly kind and did not want to bother the nurse? I don’t know. There is a piece that we're missing (p. 12, lines 0498-0508).

G 1b: But it was like, ‘why didn’t you call me’? Because you never, like even if you do hourly rounding, even if you check in all the time, if after ten minutes they need to do something and they choose not to call you, you’re not going to think, ‘oh, I need to be in that room right now’ (p. 2, lines 0074-0081).

G 6a: Like I said she’s not your typical. She wasn’t confused. She wasn’t impulsive. She wanted to go the bathroom and felt that she could do it on her own (p. 3, lines 0118-0122).

This motivation of self care, or being on ‘autopilot’, was described by a general informant as the ‘last stronghold for brave hearts’:

G 5b: So it’s a very difficult thing and I think perhaps their physical freedom, is the last, they’re all brave hearts, but I think that’s the last strong hold (p.4, lines 0160-0171).

Motivated by self care, these ‘autopilot’ positions were based upon a ‘duty free’ condition. This condition of being ‘free from the duty’ to protect and prevent a fall event was attributed to a lack of awareness and understanding. For example, key informants reported ‘not expecting to fall’, ‘just something that happened’, and the ability ‘to make it’. The following descriptors depict this pattern:

K 4: But nobody would expect you to fall. You know, you don’t expect to fall (p. 26, line 0896).

K 3: I took it upon myself, I guess, and they were all busy. So when it had happened it was like, ‘oh’, so I got up right away and they were like, ‘are you okay’? And then they all felt bad because they knew that, you know, they should have been watching closer but it was just something that happened, and I don’t fault anybody but myself (p.2, lines 0200-0209).
K 8: I’m very independent. I thought I could make it. I’m looking at that clock and I’m thinking to myself, that’s over there and that’s over there, I can make it (p.2, lines 0051-0054).

The ‘duty free’ condition was additionally described by general informants. This condition of being ‘free from the duty’ to protect and prevent a fall event was described in terms of the patient’s liberty. The ‘duty free’ condition was reported as ‘patients want their independence’, ‘are stable and walking’, and ‘want to go to the bathroom on their own’. This pattern is noted in the following descriptors:

G 5a: But I feel like a lot of ours on this floor are the younger patients that want their independence still and that they just don’t listen to our warnings. They’re not going to change their independent mind set, like they’re not going to call, it doesn’t matter (p. 3, lines 0114-0118).

G 7a: I mean there are some that if we had paid more attention, if we were in the room more frequently, yes, we could have probably prevented it with, you know, better nursing care. But then there are others that are just, you couldn’t have predicted that person would have done that. So I think it’s like a 50/50. Yeah, a nurse should have paid more attention and other times I’m like, well…what are you going to do? You know, the patient was stable, walking, able to get up himself. We decided he’s independent and, he fell. Like there’s both situations that happen (p. 13, lines 0529-0588).

And yet, despite ‘even those high risk patients’, a general informant described the ‘duty free’ condition as patients ‘like go to the bathroom on their own’:

G 3a: But even those high risk patients, there are some that still get up and go to the bathroom on their own. Because they like that. Most of them are probably up and about at home and taking the same drugs at home, you know. They don’t like to press the light for every little thing if it is a patient that’s up and about (p. 14, lines 0526-0530).

In summary, key informant data revealed self blame as ‘my stupidity that made me fall down’ and ‘I’m a crazy old lady that doesn’t listen’. Key informants may have blamed themselves due to the repeated reminders ‘to call’ the staff. General informant
data revealed frustration with the inpatient fall event. These frustrations included descriptions about noncompliance and uncooperativeness. These descriptions however, indicated a clear message of blame.

Self care activities such as picking items up from the floor and walking to the bathroom were also described by participants. These self care activities were described in terms of the ‘autopilot’ position or doing things ‘automatically’. These ‘autopilot’ positions were based upon ‘not expecting to fall’ as well as ‘patients want their independence’. However, missing from this pattern is a consideration of the vulnerability associated with illness. The next care pattern describes this vulnerability due to illness associated with adults experiencing a fall while hospitalized.

**Culture care influences.** The first care pattern of blaming, motivated by self care was influenced by cultural lifeways and philosophical factors within the social structure dimensions of the hospital setting.

*Cultural lifeways.* Participants reported on cultural lifeways influencing the care pattern of blaming motivated by self care. Cultural lifeways such as preserving independence as well as therapeutic relationships within the hospital setting were reported. For example, the cultural lifeway of preserving independence while maintaining a therapeutic relationship with hospital staff was described as ‘not wanting to put people out’. The following descriptor reflects the importance of this cultural lifeway:

K 2: I don’t like to put people out. It just seems sometime like you are putting somebody out. And whether I did or not it seemed like it to me like my own stupidity I guess you call it (p. 19, lines 0669-0674).
The cultural lifeway of preserving independence while maintaining a therapeutic relationship with hospital staff was reported as ‘apologizing’ for falling and the subsequent ‘extra’ work this caused nursing staff. The following descriptors reflect this cultural lifeway:

K 2: I am the one that gave the issue that one night and I apologized to everybody (p. 13, lines 0403-0405).

K 5: I said I’m so sorry that I caused, you know, all you this extra work because now, I mean I have to call every single time, for this, for that (p. 10, lines 0329-0333).

**Philosophical factors.** Participants reported on philosophical factors influencing the care pattern of blaming, motivated by self care. Philosophical factors such as moral principles of charity, equality and ethics were reported. The philosophical factor of charity and equality was described as reported in the following descriptor:

K 2: I can’t help it because I am charity right now. I am in a mess, everything is in a mess, there is a lot of us out there like that. We can’t help it. I don’t never look down on nobody, race, color, creed whatever. You are what you are, and who you are, and there is no use in mistreating people (p. 18, lines 0635-0644).

Philosophical factors such as ethics were reported as influencing the care pattern of blaming, motivated by self care. Philosophical factors associated with professional ethics were reported by general informants (American Nurses Association, 2001). The ethical principle of self determination was described as follows:

G 5b: Unless you completely immobilize a human being against their will, I guess they will decide to get up. And to take away somebody’s independence is very difficult and we take away so many other things when you’re in the hospital, you know, you have a right to self determination (p. 4, lines 0145-0155).
The ethical principle of autonomy was also described as influencing and supporting self care:

G 6b: I think, at this point in time, and how she was at that moment with her oxygen being so high for reasons outside of the foley, I wouldn’t have let her get up, at all, but knowing the patient, I’m sure she was insistent on getting up. She’s very particular in her ways (p. 2, lines 0051-0059).

**Care pattern 1b: Vulnerability during illness.** Adults experiencing a fall while hospitalized involved vulnerability during illness, and the ‘caged animal’ pattern. Key informants described how their vulnerability during illness was associated with the experience of an adult inpatient fall. Key informant data revealed this vulnerability as being ‘depressed’ and ‘scared’, as well as feeling like a ‘caged animal’. This pattern is noted in the following descriptors:

K 1: I need somebody, when I push the button. I don’t want to wait a half an hour. Especially, taking lactulose. You wake up in the morning or an hour after you take it you got a mess and it’s all over. And I feel sorry for them. They have a mess to clean up (p.13, lines 0477-0488).

K 6: Sometimes, I’m in a hurry though and I don’t pay attention. I've got to take it slow. I think I can do it, and I can’t. It depresses me (p.10, lines 0289-0300).

K 7: It was because I just had two abdominal surgeries in like four or five days period of time and the thought that falling could have done any damage to, you know, what I've had done just really scared me and I mean it did hurt when you land with a thud and everything just kind of vibrates through your abdominal area whatever you do, I mean it hurt a lot (p. 4, lines 0130-0140).

K 8: Being in the hospital is horrible. I’m dying to get out. I feel like a caged animal. I want to get out in that sun and walk my little puppy dog. I gotta go through this! (p. 6, lines 0192-0196).

General informants also reported on how vulnerability due to illness was associated with the experience of an adult inpatient fall. This care pattern of vulnerability
due to illness was described in terms of the therapeutic circumstances associated with hospitalization.

General informant data revealed therapeutic circumstances as physiologic responses to immobility, medications and treatments. The following descriptors depict this pattern:

G 1b: But I feel that they just think, ‘oh, I can do it’. You know, ‘I've done it before, I can do it now’. They don’t realize that maybe they’re more weaker because they’re not moving around as much (p. 6, lines 0207-0212).

G 2b: You know most of the guys they like to stand to go pee and I bet he wanted to stand. So combination of drugs, being post op, and the thought he was going to get what he needs to get done (p.8, lines 0308-0313).

G 6b: Walking in here they are healthy people. I mean, obviously, not healthy, healthy because they have cancer, but I mean walking and interactive and can do everything for themselves. They’re independent of their ADLs. And then, once they start this treatment, they are completely dependent on other people, and a lot of people have a hard time coping with that. So, they insist they can do things on their own, but really, they shouldn’t be (p.10, lines 0418-0425).

G 8b: And then you get those patients who they feel totally fine, they have been walking laps in the hallway. Just that one time, they get up and go to the bathroom and are vagal or just all of the sudden that pain med just kicked in way too fast and got dizzy and go down when they are up ad lib in the hallway, walking, talking, telling jokes. It’s just that one instance where it hit them and they went down with nobody with them (p. 12, lines 0443-0455).

The Universal Theme I contains competing forces of self care and vulnerability during illness while hospitalized. These competing forces culminated at discharge since patients are required to demonstrate self care activities. For example, discharge criteria usually include meeting self care activities such as toileting and tolerating food. However, meeting these criteria varies due to the physical vulnerabilities associated with the acute care illness. Subsequently, these competing forces create a significant dilemma
for patients and nursing staff. In fact, over half of the key informants in this study were discharged within 24 hours of experiencing a fall while hospitalized. A key informant reported concern about ‘going home’ as a result of experiencing a fall while hospitalized:

K 5: It just left me feeling helpless or something. I mean there was some talk of me going home tomorrow, so I don’t know if that’s going to happen now or not (p.4, lines 0137-0140).

Hospital discharges viewed as a patient ‘take-off’ from the hospital is apropos. Similarly, over half of airplane crashes occur with take-off/landings (National Transportation Safety Board, 2011). Airplane take-off/landing are considered high risk and require multiple safety measures such as wearing ‘seat belts’, ‘tables in the upright position’ and turning off ‘all electronic devices’. In their descriptors, general informants reported ‘discharge ready’ as a risk for inpatient falls. This pattern is noted in the following descriptors:

G 6a: The patient that fell would be considered a healthier patient, because she’s pretty much getting ready to go home (p. 7, lines 0281-284).

G 8b: It’s almost a contributing fall risk trying to get them ready for discharge, and we have had falls where it’s like the day the patient is supposed to go home. They were, I mean, they were okay to be on their own, they’re going home by themselves, somehow getting dressed or going to the bathroom they fell that day. But the patient is like, ‘I’m going home, I can do it on my own’ (p. 26, lines 1067-1073).

In summary, key informants described their vulnerability as being ‘depressed’ and ‘scared’, as well as feeling like a ‘caged animal’. General informant data described vulnerability due to illness in terms of the therapeutic circumstances associated with hospitalization. These therapeutic circumstances were reported as physiologic responses to immobility, medications and treatments. As such, inpatient fall events were described
as the culmination between competing forces of self care, vulnerability due to illness, and therapeutic interventions.

**Culture care influences.** The second care pattern of vulnerability (Care pattern 1b) was influenced by health and illness factors and kinship/social factors. These influences are inherent within the social structure dimensions of the hospital setting.

**Health and illness factors.** Participants reported on health and illness factors influencing the care pattern of vulnerability during illness. Health and illness factors such as hospitalization, surgery, under the influence of medications and weakness were reported. For example, the health and illness factor of hospitalization was described as ‘just doing me in’ because ‘it takes away from me’. The following descriptor reflects this influence on vulnerability:

K 2: Oh God, yah I have been here over a week now and it is just absolutely driving me crazy it is just doing me in. Because it takes away from me, I have always been independent all my life and never had anyone do anything for me. I never wanted anybody to do anything for me I always wanted to do for myself. I never wanted to put nobody else out for doing anything for me and that is still the way I am. And it is very frustrating when you can’t and you still in your mind think you can but you can’t you know (p. 11, lines 0301-0314).

The health and illness factor of surgery was described as ‘you may think you feel good’, and ‘you’re confident in walking but don’t’. This influence on vulnerability was reported in the following descriptor:

K 5: But that you’ve just had major surgery and, yeah, you may think you feel good and you may feel steady on your feet but it only takes that one second to get dizzy which, you know, I had gotten, a couple days ago I went to walk and I got a little dizzy so we didn’t walk right then so I know it happens. So, reinforce, you know, yes you feel better you’re on day number whatever, you feel better and you’re confident in walking, but don’t (p. 14, lines 0508-0516).
A key informant reported the difficulty associated with post op care after surgery. This factor of post op care after surgery was described as ‘having to pee really bad’ and ‘crying for 20, 30 minutes because nobody would come’. The following descriptor reflects this influence on vulnerability:

K 7: I mean, I recall my second night after having surgery, the 19th, they had already taken my catheter out and I had to get up and go pee really bad and I could not do it on my own. I was nauseated and my back hurt and I pressed the call for help button and I sat there on the edge of the bed crying for 20, 30 minutes because nobody would come and help me and I was calling for help out the door and I had to pee so bad and I didn’t want to wet my pants, you know, that’s just the last thing you want after you’ve just had major surgery (p. 12, lines 0444-0459).

The health and illness factor of ‘under the influence of medications’ was described. This influence on vulnerability was reported in the following descriptor:

K7: No, I mean, they said if you feel like you need help but I didn’t at the time feel like I needed help but after all was said and done, I think I remarked that I felt kind of dizzy but, you know, people who are under the influence of medications don’t always feel like they are under the influence of medications at the time, you know (p. 8, lines 0261-0270).

The health and illness factor of weakness was described as ‘weak as a kitten’ and those ‘legs had to sit down’. The following descriptor reflects this influence on vulnerability:

K 8: Yeah. Didn’t know I was weak as a kitten. Yeah, I was weak. Those legs just didn’t want to go anymore, I guess. They had to sit down, before I did! (p.10, lines 0356-0365).

*Kinship/social factors.* Participants reported on the kinship/social factors influencing the care pattern of vulnerability during illness. Factors such as the ability to receive as well as provide supportive kinship/social care were reported. These
kinship/social factors were described as receiving, providing, and missing supportive family care. For example, supportive family care was described as ‘she’s like a bloodhound’ when a family member monitors ‘medications and diet’. The following descriptor reflects the importance of supportive family care when dealing with the effects of vulnerability during illness:

K1: And my fiancée works during the day so I’m all alone so people at the hospital say well the social worker I guess it is or volunteer said you can’t be by yourself which I can’t. So my daughter does the wash. She is a retired teacher. She gave up teaching and my grandson is a freshman in high school so between those two and her husband, he’s the principal of a school so he’s very close to me, anyway to make a long story short, they can take care of me 24 hours a day. She monitors my medicine. She monitors my diet. She’s like a bloodhound (p. 13, lines 0447-0463).

Supportive family care was described as ‘family members assisting hospitalized patients’. This influence was reported in the following descriptor:

G 8b: And a lot of patients, they are used to having the ability to do everything on their own and they’re like, ‘I may have had surgery but I’m going to get back to that, so I’m going to start now’. So they won’t call and try to get up or a family member is there, and we tell family members call us for help, and family or the patient still does it on their own. Not all the time but it does happen frequently enough (p. 3, lines 0101-0122).

Missing supportive family care also influenced the care pattern of vulnerability during illness. For example, missing supportive family care was described as difficult and ‘hard’ during hospitalization. The following descriptor reflects the significance of this influence:

K 7: It’s hard. I’ve been here for over a week now. I miss my family, and I feel like crap and I’m probably going to be here through the rest of the week (p. 19, lines 0670-0674).
The inability to provide supportive family care during illness was also reported. This influenced the care pattern of vulnerability during illness and was described as having to ‘pull in my pride’. This influence was reported in the following descriptor:

K 2: There have been a lot of people that depend on me but I've never depended on nobody else. A lot of people have depended on me. I have never had to depend on nobody but it is getting to that point where somewhere down the line I am going to have to, and I am going to have to pull in my pride I guess (p. 20, lines 0693-0701).

Kinship/social factor of ‘concern for others, more vulnerable’ was reported by participants. Participants described concern for ‘elderly’ or ‘unconscious’ patients when experiencing a fall while hospitalized. The following descriptor reflects this influence when dealing with the effects of vulnerability during illness:

K 7: Because if I had been an elderly patient and I couldn’t have just sat there and screamed for help, you know, or if I’d been knocked unconscious, I mean, whatever, I mean thankfully I have a loud voice and it carried out into the hallway but not everybody would have been that fortunate (p. 15, lines 0563-0571).

In summary, Universal Theme I was discovered as a universal theme for participants. The culture care constructs were blaming, motivated by self care and vulnerability during illness. These constructs were embedded within social structure dimensions of the hospital setting.

**Universal Culture Care Theme II**

Culture care of adults experiencing a fall while hospitalized involved mitigating risk in order to promote health and wellbeing and was influenced by educational and technological factors, and environmental context.
Verbatim descriptors were carefully analyzed to discover meanings, expressions, and patterns of behavior. The culture care patterns for Theme II were identified from participant observation, recurrent categorized descriptors, and raw data. Two patterns underpinning Theme II were discovered from observations, descriptors, and raw data: 2a) adults experiencing a fall while hospitalized involved mitigating risk with use of the organization’s fall risk assessment scale and the ‘lost in translation’ pattern; and 2b) adults experiencing a fall while hospitalized involved mitigating risk within the physical environment pattern and the ‘lay of the land’ pattern.

**Care pattern 2a: Mitigating risk with the fall risk scale.** Adults experiencing a fall while hospitalized involved mitigating risk with use of the organization’s fall risk assessment scale and the ‘lost in translation’ pattern. Although use of the organization’s fall risk assessment scale was widespread, translating this information back to the hospitalized patient ‘missed the connection’. Participants reported ‘not knowing’ and ‘no information’ about fall risk assessment processes and results. This pattern is noted in the following key informant descriptors:

K 1: No. As far as what? No, nothing about fall risk (p. 10, line 0376).

K 3: I never received any information about fall risk or preventing falls. But they gave me a bracelet that says ‘fall risk’ and anybody that has fallen gets one. I kind of really don’t like it (p. 5, lines 0174-0176).

K 5: No one explained it to me, unfortunately. I mean I know there’s a sign there, but you don’t see it. I mean it’s white, it doesn’t stand out, you know. You need something more that, you know (p.16, lines 0534-0537).

K 7: No, nobody said to me, you know, ‘you’re a fall risk’, you know. They just said if you feel like you can’t get up, call for help and somebody will come and
help you. But, I mean, if I have questions about what’s going on, a procedure I’m going to have, why I’m getting a particular kind of medication, then everybody always has an answer for me, you know. I think that just happened to maybe be a slip up (p. 14, lines 0507-0518).

K 8: Especially when you don’t know that you are in a position to take a fall. They come in and get what they wanted, for whatever they were doing and they leave, you know? (p.17, lines 0578-0560).

Widespread use of the organization’s fall risk assessment scale was reported by the nursing staff. However, translating this information back to hospitalized patients ‘missed the connection’. Indeed, general informant descriptors reported fall risk assessment processes and results as ‘lost in translation’. The following descriptors illustrate this pattern:

G 1a: We don’t really say, ‘okay you’re a high fall risk’, just so you know. No, I don’t have any experience with that (p. 7, lines 0253-0256).

G 3a: I don’t know but it just doesn’t come to us. I don’t think automatically, oh, you’re at risk, I don’t know. It might be a good idea, to like tell them (p. 13, lines 0477-0483).

G 4a: I think that there are some times where people kind of blow it off because like everyone’s on fall risk, kind of deal. So I’ve kind of heard that a little bit. People are like, ‘yep, pretty much everyone is on fall risk’, so sometimes it doesn’t help people (p. 6, lines 0226-0233).

G 6b: I feel like it is just extra charting. A lot of the people just copy the numbers that were charted before. So, who knows how accurate it is anyway. I think it’s silly. So, no, I don’t talk to my patients about it at all (p. 14, lines 0569-0575).

G 8a: When I come in, and check to see my patients, I look to see what level we’re at. It conveys what’s the risk of this person getting up, it’s a standard way to convey that message, from nurse to nurse. Yeah, rarely do we ever communicate to a patient, “you’re at high risk or you’re at moderate risk or you’re at low risk” (p. 4, lines 0170-0177).

G 8b: Well, I mean, I don’t go through the whole list of this is what makes you a fall risk or their results (p. 13, lines 0500-0503).
General informants described the completion of the inpatient fall risk assessment scale as just ‘another thing to do’ as reported in the following descriptors:

G 1b: I kind of just feel like, I mean, you don’t even have to do it every shift. It’s only, I believe, on the screen it says just once a day, but I do all my charting anyway just because I just want to cover my bases and whatever. It’s just another thing to do (p. 10, lines 0380-0386).

G 2b: Click, click, click. Do you think it makes a difference in anything? And all this clicking we're doing, it’s keeping us here instead of in there, click, click, click (p.5, lines 0188-0192).

G 4b: It’s not helpful, it’s just paperwork. Yeah, it can be a nice reminder really. But I don’t find valuable. No, I’m sorry, no (p.7, lines 0293-0307).

G 6a: It’s valuable in the sense that we complete it on every patient, as needed, the way we're supposed to do it, as directed I should say, and however, that being said, after you do it one hundred times, you know the boxes to check, and I think you become immune to what you’re writing down. So, I think there is value in completing it (p. 8, lines 0313-0322).

General informants reported problems with the efficacy of the fall risk assessment scale to accurately predict potential fallers from non-fallers. This pattern is noted in the following descriptors:

G 1a: I also find that sometimes it classifies people as like high fall risk when they don’t seem like they are. Because certain, I mean, because of something that’s going on with that patient makes them a high fall risk even though they’re up and they’re pretty steady. We tend to classify almost everyone as like a moderate or high. Then, I think that people start almost ignoring it (p. 5, lines 0150-0158).

G 1b: We have the fall risk scale. I don’t know if that really helps, because I mean, it’s just numbers, you know (p. 8, lines 0297-0300).

G 5a: For me, personally, I can’t speak for everyone but for me, personally, everybody is a moderate fall risk in my mind like because of medications and just being in new surroundings and stuff like I said, 95% of the people are. So I just kind of treat everybody the same (p. 7, lines 0264-0270).

G 7a: You know, most of our patients end up being high falls just because they've had surgery within the last 24 hours, you know, and it’s probably a good thing.
But at the same time when you have everybody kind of as a high fall risk, it’s not taken out maybe as seriously as if, you know, it’s only the ones who are really, really high fall risk that are looked at that way. When people come off of the high fall risk and they go, ‘okay’, because they just had surgery and they’re ‘fine now’. And I know we reassess every 24 hours so like the next day, they would probably be a moderate or a low, which okay that’s fine but, you know, that first day everyone is so high of a risk that I think sometimes things might fall by the wayside (p. 4, lines 0107-0128).

The problems associated with fall risk assessment scales to accurately predict potential fallers from non-fallers led to additional problems with prevention interventions. As such, general informants reported problems with prevention based on prediction, via the use of the organization’s scale. These problems were described as a ‘catch 22’ as reported in the following descriptor:

G 7a: I think there’s a fine line between preventing the falls and then being too severe with your interventions. So it’s kind of like a catch 22. I think you’re always going to have, you can’t always predict what somebody is going to think, like this one that happened. Nobody would have thought, you know, ‘oh he’s going to not call me for the urinal that’s out of his reach’, because he’s been here for a month and a half and he’s never done anything like that before (p. 10, lines 0407-0428).

In summary, use of the organization’s fall risk assessment scale was widespread; however, translating this information back to the hospitalized patient ‘missed the connection’. Key informant data revealed, ‘Nobody said to me, you’re a fall risk’ whereas general informant descriptors reported inpatient fall risk assessment processes and results as ‘just extra charting’.

Culture care influences. The first care pattern of mitigating risk with use of the organization’s fall risk assessment scale and its subsequent ‘lost in translation’ pattern was influenced by educational factors within the social structure dimensions of the hospital setting.
Educational factors. Participants reported on the educational factors influencing
the care pattern of mitigating risk associated with the organization’s fall risk assessment
scale. As such, key informants reported their desire for information and education. This
influence is noted in the following descriptors:

K 4: You know, a little information and education, puts it all together. And then
you, as a family have to respond which is important because we have a part in
advocating for him as well (p.16, lines 0533-0538).

K 4: But like in terms of prevention, you know, people who work in hospitals
should expect people are going to be, you know, under the influence. How often
do you see that sign? But, again, that’s what I mean by that gap in education (p.
22, lines 0803-0805).

K 6: Some information. They just said you’ve got to be more careful and use both
hands. They didn’t mention risk. I think they need to give you precautions, give
you information, by talking to patients better and explaining to them (p. 31, lines
1005-1021).

However, general informants reported information and education ‘doesn’t help’. Thus,
militating risk through the use of the organization’s fall risk assessment scale was ‘lost in
translation’. This influence was reported in the following descriptor:

G 1b: If someone like recently gets diagnosed and they get weak like all of a
sudden, they still think, oh, well I used to do this just a few months ago, I can still
get up. So education I don’t feel really helps (p. 6, lines 0243-0248).

Care pattern 2b: Mitigating risk within the physical environment. Adults
experiencing a fall while hospitalized involved mitigating risk within the physical
environment and the ‘lay of the land’ pattern. The physical environment was described as
integral and significant to the adult inpatient fall phenomena. Moreover, hospitals are not
designed for sick people but rather from a healthy hospital administrator’s point of view
(Kaiser Foundation, 2012). Physical environment issues such as problems with call lights,
toilet height and hospital beds were reported by key informants. For example, key informants reported the inability to call for assistance because they could not ‘find the call light’. The following descriptors illustrate this pattern:

K 1: I was going to get up to use the restroom but I couldn’t find the call light. Sometimes you accidentally roll on it, you know. But it takes something to operate, you know (p. 5, lines 0173-0177).

K 5: No one explained the call light to me, unfortunately. I kept trying to push the nurse, somewhere on here or somewhere, and then I realized, oh it’s on here. Yeah. And it needs a clip. I don’t know if a clip would really hold it that well, but I’m always dropping it and once it goes to the floor I can’t retrieve it (p. 16, lines 0589-0598).

K 7: And the call light wasn’t long enough or I had fallen too far away from it to reach because they only have the one right next to the toilet (p. 5, lines 0149-0152).

In their descriptors, key informants described toilet design issues. For example, female key informants described the toilets were ‘too low’, as reported in the following descriptors:

K 5: Men designed that toilet. It had to be. It’s too low. You know, it’s really hard when you first come out of surgery to, you know, get yourself up and to push off and when you go to sit down it’s low (p.15, lines 0556-0566).

K 7: Yeah, and the toilet is really low. And it’s kind of hard to get on and off (p.10, lines 0342-0349).

In addition, key informants described problems associated with the design of hospital beds as reported in the following descriptor:

K 5: So that’s my one complaint and the other is this bed. The side rails, when you get up and you turn on your side to get up, and you have to kind of pull yourself up with your hands, you can’t get a good grip (p.16, lines 0567-0572).
The physical environment was reported as integral and significant to the adult inpatient fall phenomena by general informants as well. General informant data revealed design problems within the work environment. For example, general informants reported the inability to observe patients from hallways and entry ways of the inpatient hospital room. The following descriptors depict this pattern:

G 7b: The patient rooms here are not good, and from the hallway, you can only see their feet. You mostly have to step in because the bathroom and the closet jets out enough so that if the patient is lying in bed, you can really only see their feet (p.11, lines 0444 – 0449).

G 8b: Oh I think if you ask any nurse, they would redesign this unit. Any nurse, even floats, anyone who has been up here for one shift would redesign it. The hallways are so long and you can’t see into any of our isolation rooms (p. 8, lines 0306-0310).

The inability to observe patients resulted in general informants, ‘hoping they’re doing ok’ as reported in the following descriptor:

G 2b: They’re in rooms by themselves. You have to look and see what’s going on. Here, out here in this station, you’re hoping they’re doing okay and you just kind of let it go (p.8, lines 0294-0299).

Another work design problem was reported as ‘the length of our hallway is very long’. In fact when measured, the length of the inpatient hospital hallway varied from 100 to 200 feet. This is comparable to half the length of an American football field. The length of the hallway impacts the length of time nursing staff can respond to patient calls. This pattern is illustrated in the following descriptor:

G 5a: Our floor is really long, like extra, like the length of our hallway is very long. Even if we get called by the patient sometimes if we are in another room, like the length of time that it will take us, depending on where we are and what we're doing, even if we leave as soon as we get the call, sometimes the patients are already standing up on their own (p. 12, lines 0554-0559).
These various design issues resulted in a multitude of work flow problems. Newly updated patient rooms aimed at providing privacy resulted in inadequate observation. Renovations to include computer work stations resulted in slower internet connections. This pattern of cascading design problems are reported in the following descriptor:

G 7a: I think one of the harder things on this floor is because they’re all private rooms and they’re so spread out. It’s for patient satisfaction, and patient privacy which every hospital is doing now but then you look at these rooms and they’re so closed off, it’s hard to keep a close eye on them. I’d put windows on the doors maybe a little bit more because even the doors when they’re closed, you can’t see anything in them. And maybe a bigger nurses station because we have the two at the front and the back which is nice, and then we have the one in the middle, but it’s closed off so you can’t see. It’s not like you could just be sitting there charting and look over and see how your patients are doing. You know, the computers in the hallways are a nice idea but they don’t work very well. I don’t know, it’s like a slow connection so you can sit there for five minutes waiting for it to load up, so nobody wants to sit there and do their charting. But those are the kinds of things that I would look at, as maybe the rooms are nice and big and they’re private, but do they really have to be that big, could we move them a little bit closer together? (p.7, lines 0309-0338).

The Universal Theme II contains dueling forces of safety and risk. These dueling forces culminated as a conundrum, or a ‘toilet quandary’. The following descriptor reported on this ‘toilet quandary’:

G 5b: In most of the older designed bathrooms you have a wall on one side and you have the sink on the other side. So you have a grab bar to your left side and a sink for your elbow on the other side to do a push off, and our patients are kind of left with only one side and if that’s the affected side, you know they’re kind of in a quandary (p.11, lines 0450-0461).

Over 50% of the inpatient fall events within this study were associated with toileting (Figure 5). This percentage is comparable as reported within the current state of the science (Currie, 2008; Enloe et al., 2005; Fischer et al., 2005; Healy et al., 2008; Hitcho et al., 2004). However, hospital design issues compromised the health and welfare
of hospitalized patients as described by participants. Indeed, which is a stronger impulse: the urge to use the toilet, or call for assistance? Is it a reasonable expectation to ask a patient, who may be dizzy due to their therapeutic circumstance of medications and/or immobility, to look for a call light while grappling with a bodily need? Is it a reasonable expectation to ask a patient to call knowing that, ‘it is not immediate that you call and we walk in the door’, while struggling with the urge to use the toilet?

Figure 5: Circumstances of the adult inpatient fall event.

This pattern as noted in the following descriptors became quite a conundrum:

G 3a: But I just tell them if you are feeling dizzy or if you are, you know, if you cannot make it to the bathroom please call, sit on the side of the bed, call us before you go. Even though if they are risk, we don’t stop them from doing things on their own unless they are unsteady, then (p. 13, lines 0509-0517).

G 8b: Even though we tell our patients to call, they know call for help, a lot of people tell them don’t wait until the last minute when you absolutely can’t hold it anymore to call because we get here as soon as we can. It’s not immediate that you call and we walk in the door (p. 3, lines 0091-0099).
In summary, the physical environment was described as integral and significant to the adult inpatient fall phenomena. Physical environment issues such as problems with call lights, toilet height and work design problems were reported by participants. Key informants reported the inability to call for assistance because they could not ‘find the call light’. General informants reported the inability to observe patients from hallways and entry ways of the inpatient hospital room. Another work design problem was reported as ‘the length of our hallway is very long’. Subsequently, an increase in walking was also described by the nursing staff. As such, inpatient falls were described as the culmination between competing forces of safety and risk: the use of a fall risk assessment scale and nurse call light system versus inadequate translation to patients about fall risk processes and results and inadequate hospital design issues.

*Culture care influences.* The second care pattern of mitigating risk through the physical environment and the ‘lay of the land’ pattern was influenced by environmental and technological factors within the social structure dimensions of the hospital setting.

*Environmental factors.* Participants reported on the environmental factors influencing the care pattern of mitigating risk. Environmental factors associated with hospitalization such as therapies and treatments were reported. For example, a general informant described concern about doing ‘more damage’ during hospitalization:

G 2a: I think with patients falling, you’re immediately concerned that they hurt themselves. Have we done more damage now? Did they come into this place for something and now they’re leaving with a broken foot or something like that (p. 9, lines 0370-0375).

Alternatively, a general informant described concern about not providing pain medications post operatively:
G 7a: Yeah, I mean, unfortunately it’s necessary because, you know, your alternative is, you can’t have a surgery without sedating someone. You don’t want to not give somebody pain medicine even though it might make them a little woozy and unsteady, you know, you just have to be aware that that’s what you’re doing to them (p. 14, lines 0602-0612).

Environmental factors influencing the care pattern of mitigating risk were reported as ‘suggestions for improvement’. Environmental improvements such as ‘more than one call light’ were described by key informants. This influence on mitigating risk was reported in the following descriptor:

K7: I think that bathrooms maybe need to be remodeled slightly. There should be more than one call light in the bathroom (p. 5, line 0166).

Environment improvements for mitigating risk within the hospital setting were also described by general informants. Suggestions for redesigning toilets, inpatient rooms, and the work space were reported. Input from general informants was loud and clear, and reminiscent of Florence Nightingale’s (1860; 1969) promotion of opening windows, in order to mitigate risk. Indeed, this general informant had the nickname of ‘McGyver’ thus demonstrating her ability to mitigate risk influenced by the environmental factor of a lack of lighting:

G 4b: I’m sorry, they call me McGyver, some of them. McGyver, you know a TV guy, well it’s fun. You know I like to invent stuff or put stuff together. I find of doing anything that will benefit the patient. But as I told my manager, I like to take care of post op, I want to be there. But again I want to be there as much as I can to make sure what’s going on, so I bought a nightlight. Yeah, at the Dollar Store (p.16, lines 0617-0628).

An example of the environmental influence of mitigating risk is the following suggestion of raising the height of the toilet based on the age of most hospitalized patients, rather than the age of the designer:
G 5b: I wish our toilets were a little bit higher, if that is another change. The height from the floor, if you were a person with arthritic knees or a person with a leg incision or a chest incision it is hard to push yourself off. When you have the post-op sternum you don’t have a great means of support for your upper body to push yourself up off that seat, which is so low. It’s so low to the ground and I don’t think the person who designed that toilet could not have been anything older than forty (p.10, lines 0399-0410).

Other environmental suggestions included the redesign of inpatient bathrooms and showers. A general informant reported the following redesign suggestion related to the inpatient bathroom:

G 5b: The way our bathroom is designed there isn’t a grab bar from the end of the wall adjacent to the toilet seat. I don’t know if there would be a way to retrofit something into the door that would be sturdy enough to be a hold bar (p. 6, lines 0229-0235).

A general informant reported the following redesign suggestion for the inpatient shower:

G 5a: And patient rooms have like the slant so the showers don’t leak in the bathroom. So like a lot of them will like kind of trip up on that a little bit, even if they walk pretty steady (p.12, lines 0513-0518).

Environment improvements for mitigating risk within the hospital setting included the redesign of hospital patient rooms and work spaces for the observation of patients. For example, a general informant reported the following redesign suggestion for hospital patient rooms:

G 7b: I would redesign the rooms, at least orient it so that the beds are the other way, so that like when you’re looking in and maybe that was designed that way for patient privacy, who knows. But as far as like walking down the hallways and being able to just, see my patient. If I ever set a patient up in the chair I try to put them in eye line of the door, if I can (p. 11, lines 0459-0468).

Work place redesign for patient observation from hallways was also reported:

G 4a: To make sure that we always have that visualization as we're going through the hallway because you know, I’m always going to do the hourly rounds and
check in on them, but I couldn’t see him. Someone had pulled the curtain to give him some privacy (p.13, lines 0535-0546).

Environment improvements for mitigating risk included patient observation from the nurse’s station, as reported in the following descriptor:

G 6a: Just the environmental factors up here promote limited visibility. Even though, the rooms are around a central nurse’s station, it’s still difficult to see into all the rooms to see what’s going on with the patient (p. 6, lines 0246-0253).

Technological factors. Participants reported technological factors influencing the care pattern of mitigating risk. Key informants suggested technological improvements for mitigating risk within the hospital setting. Technological improvements such as a nurse call system that is ‘easy to use’ and a ‘separate TV and call light system’ were reported. The following descriptor reflects this technological influence for mitigating risk:

K 1: You know, some of them, I mean I can’t compare the hospitals but I was at Memorial Hospital before I came here. They had a little bitty button thing that you had attached to your gown and it’s a call button and you push that. Why do they have that big bulky thing there, a separate one for the TV and stuff like that but you need that call button to be very agile and very easy to get a hold of. That’s just a suggestion, for the call thing (p. 6, lines 0189-0199).

General informants also suggested technological improvements for mitigating risk within the hospital setting. For example, a general informant suggested a patient education TV channel or ‘falls channel’ for hospitalized patients:

G 5b: I would kind of like to see if we had like a patient channel, an education channel where we could have that message because I think a lot of people, reading is not going to be their best suit while they’re in the hospital. They’re often times on a lot of analgesics of one type or another so to give them a printed document, you know, when there’ so much other chaos going on around them is not going to be nearly as user friendly as they are laying in bed with their TV controller and watching the 'falls channel'. We don’t have a television channel devoted to that (p. 6, lines 0244-0260).
A general informant suggested ‘useable computers’ within the nurse’s work stations. By improving the work stations with useable computers, nurses would be closer to patient rooms and therefore, mitigate risk for inpatient falls:

G 8b: Especially with the way the new building is built with the really long halls and a lot of people will sit in the front nurse’s station because those computers are quicker and work better. That’s where our tube station is up front when meds come up; they’re all up front so a lot of people stay up front waiting for that stuff (p. 4, lines 0136-0146).

In summary, Universal Theme II—culture care of adults experiencing a fall while hospitalized involved mitigating risk in order to promote health and wellbeing and was influenced by educational and technological factors, and environmental context—was discovered as a universal theme for participants. The culture care construct was mitigating risk. This construct was embedded within social structure dimensions of the hospital setting.

Diverse Culture Care Theme

Culture care of adults experiencing a fall while hospitalized meant experiencing diversity in the efficacy of staffing patterns and was influenced by economic factors, kinship/social factors and political/legal factors.

Verbatim descriptors were carefully analyzed to discover meanings, expressions, and patterns of behavior. The culture care patterns for the Diverse Theme was identified from participant observation, recurrent categorized descriptors, and raw data. Although the theme of nurse staffing was reported broadly, descriptors revealed differences and variations as to the effects and role of this theme. One care pattern underpinning the Diverse Theme was discovered from observations, descriptors, and raw data:
Care pattern: Efficacy of staffing patterns. Adults experiencing a fall while hospitalized involved experiencing diversity in the efficacy of staffing patterns as well as ‘turbulence’ patterns. Participants reported variations or ‘turbulence’ in staffing patterns associated with the day of the week as well as the time of the day. Within this study, half of the inpatient fall events occurred during the night shift, and 40% occurred on a weekend (Table 7). Key informants reported variations in the efficacy of staffing patterns specific to the night shift. This pattern is noted in the following descriptors:

K 1: At night is your biggest problem. Nobody wants to work nights. You know, I don’t know the shifts they work but some work long hours. And I know they get tired. Yah, the daytime is a lot better (p. 15, lines 0550-0571).

K 5: The night shift are a little slower. I mean, it seems like the night ones are a little slow to react sometimes (p. 9, line 0440-0433).

K 7: I think that’s how it is anywhere, you know, get a nurse on a bad night and it’s frustrating because, of course, I’m the patient. But I’m not going to hold it against them either (p. 18, lines 0660-0665).

General informants also reported variations in the efficacy of night shift staffing, as reported in the following descriptor:

G 6b: Staffing can be problem. I know for example, we rely on our charge nurse, a lot to help us with things. So, when she has patients, she is more unavailable. So then you can’t get to your other patient, if they need you. Especially on nights we’re short staffed occasionally, and that’s not good (p. 15, lines 0581-0598).

However, a general informant did not describe any variations, regardless of the time of the day. This reported lack of ‘turbulence’ indicated additional diverse data:

G 4a: I don’t think that there are any issues overnight. Staffing has been pretty good overnight. I think we had enough people and most nights that I've worked, we've been pretty well staffed, as well as the day shift, I would say (p. 12, lines 0510-0516).
Variations in the efficacy of staffing patterns were also reported associated with weekends. A general informant described weekends as ‘understaffed’ as reported in the following descriptor:

G 3b: We're always understaffed on weekends, and always meaning probably 90% of the time. You know, instead of eight patients, a good staffing they have eight patients and then on a bad staffing they have twelve. Makes a big difference. We're usually at five. On weekends, if we don’t have enough staff we even go to six, or evenings or nights they have six but if your tech has twelve, you have six. And then if somebody’s on a bed alarm at the end of the hall, no matter how quick you walk, they're on the floor by the time you get there (p.14, lines 0549-0563).

The variations in the efficacy of staffing patterns affected nursing staff as well. Job stress and ‘burnout’ within the profession have been linked to staffing pattern variations (Jennings, 2008). In their descriptors, general informants reported on the effects of these variations or ‘turbulence’. For example, general informants described being ‘too hungry’ due to a lack of meal time and ‘stinky attitudes’ due to job stress. The following descriptors depict this pattern:

G 4b: It’s worse when it’s really low staff. Yeah, really we are short staffed, almost once a week. It’s a big, definitely, because like, but alright it’s been a busy night and I really have not eaten my midnight snack and I can manage …but if I’m too hungry I cannot think and function well. So it’s almost like three or four in the morning, it’s the busiest time so I said ‘I’m going to eat’, and they know me, I swallow my food, I boom, boom, boom. So I can hear lights …so I said I cannot do this anymore. I swallow everything and got out (p. 10, lines 0393-0414).

G 5a: Sometimes staffing is an issue. You notice in a second when you have a high acuity floor and you are understaffed even by one person, you notice the gap. It stinks, people’s attitudes, everything. Nobody wants to come to work and stress like that (p.15, lines 0644-0651).
Of significance, key informants also reported on the effects of staffing pattern variation in relation to job stress. A key informant described the staff as being ‘overworked’, as reported in the following descriptor:

K 7: No, I mean, sometimes it takes a minute for anybody to answer the light but I think they’re, I mean, overworked, you know (p. 12, lines 0412-0416).

These variations in the efficacy of staffing patterns affected professional care/caring for hospitalized patients. Key informants reported on the personal effects of variations in staffing patterns. These variations or ‘turbulence’ in staffing patterns resulted waiting, or ‘flying standby’. The following descriptors illustrate this pattern:

K 4: I can see from the hospital standpoint especially, okay, it’s busy. So you know what happens when you can’t respond to everybody STAT all the time and so, you know, I do understand that part of it. Today is just one of those times it took a little longer (p.15, lines 0511-0516).

K 8: I think it’s pretty good, you know? Really, except for that incident I thought it was pretty good and maybe someone made a mistake. They should have left somebody on that floor, if they are having a meeting or something. I don’t know what they can do about it but…but you know there was just nobody on the floor at all. I phoned someone and they said, ‘I’m sending somebody’. And I’m waiting and waiting. Well, I can wait a long time, but nobody came, nobody came (p. 15, lines 0532-0546).

In summary, participants reported variations or ‘turbulence’ in staffing patterns associated with the day of the week as well as the time of the day. Participants reported variations in the efficacy of staffing patterns specific to night and weekend shifts. In their descriptors, general informants reported on the effects of these variations as being ‘too hungry’ due to a lack of meal time and ‘stinky attitudes’. Of significance, key informants also reported on the effects of staffing pattern variation and described some of the staff as being ‘overworked’.
Culture care meanings, expressions and patterns are embedded and derived from within the context of particular cultural worldviews, values, and social structures (Leininger 1970, 1988, 2001). The care pattern associated with this diverse theme was embedded within the hospital context. The next section describes the social structure influences associated with this care pattern.

**Culture care influences.** The care pattern of experiencing diversity in the efficacy of staffing patterns was influenced by economic factors, kinship/social factors and political/legal factors. These influences are inherent within the social structure dimension of the hospital setting.

**Economic factors.** Participants reported on the economic factors influencing the care pattern of experiencing diversity in staffing patterns. Economic factors such as hospitals ‘can’t afford’ more nurses as well as ‘budget cuts’ for nursing staff was reported. The economic factor of ‘can’t afford’ more nurses resulted in a ‘lack of attention’, as reported in the following key informant descriptor:

K 7: Well, maybe if they, which I’m sure they can’t afford this, but if the hospital could afford more than one nurse for every so many patients, you know what I mean, like maybe two nurses for four patients instead of one nurse for six patients, you know. I mean, it would make things easier because you could get a little more attention from the nursing staff (p. 12, lines 04320-0433).

The economic factor of ‘budget cuts’ resulted in staffing pattern variation. The following descriptor reflected this influence:

G 8b: Umm, very very very very rarely, very rarely are we fully staffed like we’re supposed to. Well, when I started here four years ago, the idea was it was nine nurses, one secretary, and four techs. So secretary answers the phones obviously and every nurse had three or four patients. Every tech had eight patients and there was a charge nurse who was there to help. And it worked fabulously in my opinion. Then the budget cuts and everything else. So now its eight nurses, the
idea would be eight nurses, four techs and a secretary. So you now take four to five patients. I as charge have two to three patients and then we have the four techs on a good day, where they each have eight patients (p. 16, lines 0607-0636).

**Kinship/social factors.** Participants reported on the kinship/social factors influencing the care pattern of experiencing diversity in staffing patterns. Key informants described how they dealt with the effects of ineffective staffing patterns through supportive family care:

K 4: So I'll stay here with him tonight. Last night I should have stayed but I was just tired. I stayed with him the night before last, you know, because he had the surgery and it was, you know, every, he really needed a lot of attention, you know, move this, move that, get me this, get me that, I mean a nurse would have had to be in here all the time (p. 5, lines 0181-0188).

However, a general informant described ‘not solely trusting the family’ in their supportive care:

G 4a: I've always been taught, and I agree with it, to not trust just the family to be the observer because they’re not the healthcare professional, you know, so it’s good to have another set of eyes in there and I appreciate the help that she, you know, would like to offer but I definitely think that having the bed alarm on would still be important (p.11, lines 0459-0469).

Kinship/social factors such as communication have been linked to the effects of variations in staffing patterns (Seago, 2008). Key informants reported diversity in their experience with communication:

K 1: It used to be, some of the hospitals they would come in with two nurses when they change the shift. You know have the chart and they would talk it over. I don’t see that here. Have them come in and say, you know, ‘I’m Mary Jo and I'll be your nurse for the day’, and they ask each other what’s he doing, what’s happening with him there. So they need more communication (p. 10, lines 0305-0314).

K 2: All of the nurses were just as nice and caring and ‘how are you feeling’, you know. They would just walk in and ask me that. You know, ‘how you feeling’,
‘have you got any pain’, ‘do you need this, do you need that’, they were just absolutely good (p. 16, lines 0529-0536).

Kinship/social factors such as collaboration have been associated with staffing pattern variations (O'Daniel & Rosenstein, 2008). Key informants reported diversity in their experience with collaboration. For example, key informants reported good experiences with collaboration:

K 2: They were on me constantly and watching me. They did not want me getting up on my own and trying to walk, you know what I mean. It made me feel good. It made me feel that I was being taken care of and everything that they were doing was for my own good and I know that (p. 16, lines 0510-0514).

K 3: Nursing care has been good. That’s one thing about these nurses; they’re very attentive (p. 8, lines 0279-0280).

However, poor experiences with collaboration were also reported. For example, one key informant did not appreciate being categorized as a ‘faller’:

K 3: I kind of really don’t like this band, it but it kind of makes it seem to like other people that like, I really like fell. But still, everybody has to categorize in the same category, if you fell. I guess it’s easier to see, so everybody knows that person, you know, anytime could possibly fall (p. 2, lines 0074-0083).

A lack of collaboration resulted in ‘traumatizing’ and ‘ineffective’ patient care experiences. The following descriptors depict this influence on the care pattern of effective staffing for patient care:

K 5: I’m not used to a teaching hospital, so that’s a whole new experience where you’ve got 10 million people. It seems like someone just comes in and introduces themselves and then, you know, whatever they’re going to do they do and then five minutes later someone else is back, saying the same thing. It’s been traumatizing (p. 19, lines 0686-0693).

K 7: Also, I mean, I was on a lot of pain medication and that probably didn’t help the situation any so maybe, you know, they need to, I don’t know, be a little more strict about who they allow to get up and go to the bathroom on their own (p. 7, lines 0248-0255).
**Political/legal factors.** Participants reported on the political/legal factors influencing the care pattern of experiencing diversity in staffing patterns. Influences such as the state’s Staffing by Acuity Act (Illinois General Assembly, 2008) and Hospital Report Card Act (Illinois General Assembly, 2004) contributed to this culture care pattern. The legal ramifications of not adhering to the publicly reporting concepts of transparency and continuous quality improvement (CQI) influenced this culture care pattern as well (Centers for Medicare & Medicaid Services, 2011).

The state’s Staffing by Acuity Act was enacted in 2008. The Act requires a mechanism for measuring patient acuity along with nurse staffing plans based on this measurement (Illinois General Assembly, 2008). Additionally, each hospital must maintain a committee, comprised of direct care nurses, that oversees compliance with this Act. However, implementation of this law within the hospital setting has been fraught with issues. Issues surrounding how to define acuity and therefore measurement, along with controlling labor costs have influenced true compliance with this law. The following descriptor from a general informant aptly describes the organization’s attempt to comply with this statute:

G 3b: I mean, we do acuity every day, twice in 24 hours, our shift and night shift and we feel like it’s not being used to our benefit. We don’t see any reasoning why we do acuity. We don’t see it at all. It doesn’t affect how many patients we get, what type of patients we get, how our assignment is made. I think it’s just like financial, how heavy they are (p. 9, lines 0440-0447).

The state’s Hospital Report Card Act was enacted in 2004. The Act requires each hospital to publicly report volumes and costs of services, quality and safety data such as nosocomial infection rates, nurse staffing data, and patient satisfaction data (Illinois
Issues surrounding adverse event definitions and therefore measurement, along with minimizing litigation costs have influenced true compliance with this law. The following descriptor describes the organization’s attempt to comply with this statute as additional pressure within the hospital work environment:

G 5a: I just feel like they’re just sometimes so unavoidable like today, and when they’re like ones like today, they just are so frustrating because you know it’s a big black mark against you. Like, because we keep track of them on our calendars and we mark like how many days we have with no falls and stuff and like every single meeting that our floor has, we talk about falls, we talk about that we have a lot of them, we talk about like ways to prevent them. I’m like sick of hearing about falls, because we do it so much up here. I just feel like it’s almost something that’s unavoidable at this point because we talk about it so much and they still are happening. Like it’s not like we're ignoring this stuff, you know (p. 17, lines 0740-0762).

The legal ramifications of not adhering to the publicly reporting concepts of transparency and continuous quality improvement (CQI) influenced this culture care pattern as well. Each nursing unit within this hospital had a ‘quality’ bulletin board. The ‘quality’ bulletin board listed the number of inpatient falls each month, and was manually updated after each inpatient fall event. As such, the adult inpatient fall was recorded on the unit’s quality bulletin board the same day of the event occurrence. Each unit’s quality bulletin board was publicly available, usually at or near the nurse’s station. The following data from a general informant described the organization’s focus towards transparency:

G 7b: I just know there are a lot of different studies going on now. I know we've been doing a study on our call light systems and answering response times and then there was a fall wrist band study up here and we do a lot of talking about falls (p. 15, lines 0601-0608).

The following data from general informants aptly described the organization’s continuous quality improvement (CQI) focus:
G 5a: It’s the most frustrating thing on earth, most frustrating. Because then you have to hear from every single person like, oh, do your fall survey, oh, how can we have less falls, how can you have less falls when you tell your patient to call and you check on them five minutes before they fall and they say they don’t need anything and you walk out of the room and then they fall because they didn’t call for anything (p.2, lines 0079-0091).

G 8b: I’m on the fall and restraint committee here, so I know just going to all those committee meetings and my experience up here, a lot, even though we tell our patients to call, they know call for help, a lot of people tell them don’t wait until the last minute when you absolutely can’t hold it anymore to call because we get here as soon as we can. It’s not immediate that you call and we walk in the door (p. 3, lines 0088-0099).

In summary, the culture care of adults experiencing a fall while hospitalized meant experiencing diversity in the efficacy of staffing patterns and was influenced by economic factors, kinship/social factors and political/legal factors was discovered as a diverse theme for participants. The culture care construct was efficacy of staffing patterns, and this construct was embedded within social structure dimensions of the hospital setting.

Summary

The findings discovered in this ethnonursing study were presented in this chapter. The findings related to the domain of inquiry: culture care meanings, expressions, and patterns associated with the adult inpatient fall phenomena. Themes were generated using the ethnonursing method and were derived from adult inpatients that fell during their hospital stay (emic) as well as from nursing staff that had direct knowledge about the inpatient fall event (etic). Two universal themes and one diverse theme were abstracted from participant descriptors and patterns (Table 9). The three themes reflect the similarities and differences of culture care associated with adults experiencing a fall.
while hospitalized. Social structure factors such as economic, political/legal, kinship/social, philosophical, educational, technological, and cultural lifeways influencing these culture care themes were also presented.

Culture care of adults experiencing a fall while hospitalized which included blaming, was motivated by self care despite their vulnerability during illness in order to maintain health and wellbeing, and was influenced by cultural lifeways, philosophical factors and kinship/social factors was discovered as one of two universal themes for participants. Two patterns underpinning Theme I were discovered from observations, descriptors and raw data: (1) adults experiencing a fall while hospitalized included blaming, motivated by self care; and (2) adults experiencing a fall while hospitalized involved vulnerability during illness.

Key informant data revealed self blame as ‘my stupidity that made me fall down’ and ‘I’m a crazy old lady that doesn’t listen’. Key informants may have blamed themselves due to the repeated reminders ‘to call’ the staff. General informant data revealed frustration with the inpatient fall event. These frustrations included descriptions about noncompliance and uncooperativeness. These descriptions however, indicated a clear message of blame.

Self care activities such as picking items up from the floor and walking to the bathroom were described by participants. These self care activities can be described in terms of the ‘autopilot’ position or doing things without thinking or ‘automatically’. These ‘autopilot’ positions were based upon ‘not expecting to fall’ as well as ‘patients want their independence’.
The culture care pattern of blaming, motivated by self care was influenced by cultural lifeways and philosophical factors. The cultural lifeway of preserving independence while maintaining a therapeutic relationship with hospital staff was described by key informants as ‘not wanting to put people out’, ‘apologizing’ for falling and the subsequent ‘extra’ work this caused nursing staff. Philosophical factors such as moral principles of charity, equality and ethics were reported. These moral principles are associated with professional ethics (American Nurses Association, 2001).

Key informants described their vulnerability as being ‘depressed’ and ‘scared’, as well as feeling like a ‘caged animal’. General informant data described vulnerability due to illness in terms of the physiologic responses to immobility, medications and treatments.

The culture care pattern of vulnerability was influenced by health and illness factors and kinship/social factors. Health and illness factors such as hospitalization, surgery, under the influence of medications and weakness were reported. The health and illness factor of hospitalization was described as ‘just doing me in’ because ‘it takes away from me’. The health and illness factor of surgery was described as ‘you may think you feel good’, and ‘you’re confident in walking, but don’t’. The health and illness factor of weakness was described as ‘weak as a kitten’ and those ‘legs had to sit down’.

Participants reported on the kinship/social factors influencing the culture care pattern of vulnerability during illness. These kinship/social factors were described as receiving, providing, and missing supportive family care. Supportive family care was described as ‘family members assisting hospitalized patients’. Missing supportive family
care was described as difficult and ‘hard’ during hospitalization. The inability to provide supportive family care during illness was described as having to ‘pull in my pride’.

The second theme—culture care of adults experiencing a fall while hospitalized involved mitigating risk in order to promote health and wellbeing and was influenced by educational and technological factors, and environmental context—was also discovered as a universal theme for participants. Two patterns underpinning Theme II were discovered from observations, descriptors and raw data: (1) adults experiencing a fall while hospitalized involved mitigating risk with use of the organization’s fall risk assessment scale, and (2) adults experiencing a fall while hospitalized involved mitigating risk within the physical environment.

Although use of the organization’s fall risk assessment scale was widespread, translating this information back to the hospitalized patient ‘missed the connection’. Key informant data revealed, ‘Nobody said to me, you’re a fall risk’, ‘I never received any information about fall risk or preventing falls’, and ‘No one explained it to me, unfortunately. I mean I know there’s a sign there, but you don’t see it. I mean it’s white, it doesn’t stand out, you know’.

General informant descriptors reported inpatient fall risk assessment results as ‘just extra charting’, ‘I don’t talk to my patients about it at all’, and ‘it’s a standard way to convey a message, from nurse to nurse. Rarely do we ever communicate to a patient’. General informants described the completion of the inpatient fall risk assessment scale as just ‘another thing to do’ and ‘It’s not helpful, it’s just paperwork’. General informants reported problems with the efficacy of the fall risk assessment scale to accurately predict
potential fallers from non-fallers. General informant descriptors reported this lack of accuracy as ‘I think that people start almost ignoring it’, and ‘We have the fall risk scale. I don’t know if that really helps, because I mean, it’s just numbers’.

The culture care pattern of mitigating risk through use of the organization’s fall risk assessment scale and its subsequent ‘lost in translation’ was influenced by educational factors within the social structure dimensions of the hospital setting. Key informants reported their desire for information and education as ‘they need to give you precautions, give you information, by talking to patients better and explaining to them’.

The physical environment was described as integral and significant to the adult inpatient fall phenomena. Physical environment issues such as problems with call lights, toilet height and work design problems were reported by participants. Key informants reported the inability to call for assistance because they could not ‘find the call light’. Female key informants described the toilets as ‘too low’ and ‘the person who designed that toilet couldn’t have been anything older than forty’. General informants reported the inability to observe patients from hallways and entry ways of the inpatient hospital room. Another work design problem was reported as ‘the length of our hallway is very long’. Subsequently, an increase in walking was also described by the nursing staff.

The culture care pattern of mitigating risk through the physical environment was influenced by environmental and technical factors within the social structure dimensions of the hospital setting. Environmental factors associated with hospitalization such as therapies and treatments were reported. A general informant described concern about doing ‘more damage’ during hospitalization as ‘did they come into this place for
Suggestions for redesigning toilets, inpatient rooms, and the work space were also reported. Input from general informants was loud and clear. A general informant had the nickname of ‘McGyver’. This demonstrated her ability to mitigate risk influenced by the environmental factor of a lack of lighting and ‘bought a nightlight …at the Dollar Store’.

Participants reported technological factors influencing the culture care pattern of mitigating risk. Technological improvements (a nurse call system that is ‘easy to use’ and a ‘separate TV and call light system’) were reported by key informants. Technological improvements (a patient education TV channel or ‘falls channel’ as well as ‘useable computers’ within the nurse’s work stations) were reported by general informants.

In addition, the theme of culture care of adults experiencing a fall while hospitalized involving the experience of diversity in the efficacy of staffing patterns and influenced by economic factors, kinship/social factors, and political/legal factors was discovered as a Diverse Theme for participants. Although the theme of nurse staffing was reported broadly, descriptors revealed differences and variations in the effects and role of this theme. One care pattern of the diverse theme was discovered from observations, descriptors, and raw data: Adults experiencing a fall while hospitalized meant experiencing diversity in the efficacy of staffing patterns, and ‘turbulence’ patterns.

Participants reported variations or ‘turbulence’ in staffing patterns associated with the day of the week as well as the time of the day, specifically, night and weekend shifts. However, a general informant did not describe any variations, regardless of the time of the day. This reported lack of ‘turbulence’ indicated diverse data. In their descriptors,
general informants reported on the effects of these variations as being ‘too hungry’ due to a lack of meal time and ‘stinky attitudes’. Of significance, key informants also reported on the effects of staffing pattern variations and described the staff as being ‘overworked’.

The culture care pattern of experiencing diversity in the efficacy of staffing patterns was influenced by economic factors, kinship/social factors and political/legal factors. Economic factors such as hospitals ‘can’t afford more nurses’ as well as ‘budget cuts’ for nursing staff was reported. This influence of ‘can’t afford more nurses’ resulted in a ‘lack of attention’. Kinship/social factors such as supportive family care, communication and collaboration were reported. These influences resulted in diverse care experiences from ‘I was being taken care of, and everything that they were doing was for my good’ to ‘traumatizing’ and ‘ineffective’ patient care. Political/legal factors such as the Staffing by Acuity and Hospital Report Card statutes (Illinois General Assembly, 2004, 2008) also influenced this culture care pattern. A discussion of these findings is presented in the next chapter.
CHAPTER FIVE

DISCUSSION

This chapter provides a discussion of the major findings discovered through the methodological lens of Culture Care theory (Leininger 1984, 1988, and 2001). The purpose of this study was to discover, describe and systematically analyze culture care meanings, expressions, and patterns of adult inpatients that have fallen. This research focus was designed to discover the adult inpatient’s fall experience within the hospital context and systematically analyze the meanings, expressions, and patterns of care.

The domain of inquiry (DOI) for this study was culture care meanings, expressions, and patterns related to adult inpatient falls. The DOI, research questions, and theoretical assumptions guided knowledge discovery through engagement with key informants (adult inpatients that fell during their hospital stay) as well as general informants (nursing staff that had direct knowledge about the inpatient fall event) within a large urban academic hospital in the Midwestern United States.

Studying the culture care of two groups allowed for a comparative approach to knowledge discovery, and is congruent with the ethnonursing research method. Three themes were identified based upon the recurrent, observed, and expressed commonalities and differences among the data:
Universal Theme I: *Culture care of adults experiencing a fall while hospitalized* included blaming, motivated by self care despite their vulnerability during illness in order to maintain health and wellbeing and was influenced by cultural lifeways, philosophical factors and kinship/social factors.

Universal Theme II: *Culture care of adults experiencing a fall while hospitalized* involved mitigating risk in order to promote health and wellbeing and was influenced by educational and technological factors, and environmental context.

One diverse theme was identified based upon the recurrent, observed, and expressed variabilities and differences among the data:

The Diverse Theme: *Culture care of adults experiencing a fall while hospitalized* meant experiencing diversity in the efficacy of staffing patterns and was influenced by economic factors, kinship/social factors and political/legal factors.

A major premise of the ethnographic theoretical framework of the Culture Care theory is the influence of social structure factors (Leininger 1990, 2006). In this study, the thematic findings were in fact embedded within the social structure dimension of the hospital setting. Therefore, the culture care themes and their sociocultural influences associated with the adult experiencing a fall while hospitalized will be discussed in this section. This discussion will continue to use well know aviation terminology, in order to metaphorically ‘paint a culture care picture’.

The goal of this study is to use these findings to provide culturally congruent nursing care in order to meet the needs of hospitalized adults. This section addresses the
transferability of the data, based upon the evaluation criteria of Guba & Lincoln (1994) and Leininger (2001, 2006). Research findings will be discussed in accordance with current literature and Leininger’s (2001, 2006) three nursing care modalities: (1) culture care preservation/maintenance, (2) culture care accommodation/negotiation, and (3) culture care repatterning/restructuring. Included within this discussion are the implications for nursing practice, administration and education. The study’s limitations along with recommendations for future research will also be discussed.

**Culture Care Themes**

Universal Theme I: *Culture care of adults experiencing a fall while hospitalized included blaming, motivated by self care despite their vulnerability during illness in order to maintain health and wellbeing and was influenced by cultural lifeways, philosophical factors and kinship/social factors.*

The importance of the social structure factors of cultural life ways, philosophical and kinship/social factors was confirmed for Universal Theme I. The cultural lifeway of preserving independence while maintaining a therapeutic relationship with hospital staff was described by key informants as ‘not wanting to put people out’, ‘apologizing’ for falling and the subsequent ‘extra’ work this caused nursing staff. This influence of preserving independence while maintaining a therapeutic relationship with hospital staff has been described in the literature. Latimer (1999) reported how hospitalized adults ‘keep quiet and lay low’ in order to maintain their inclusion within the medical domain (p. 187). Hospitalized elders were reluctant to discuss their experiences with hospitalization due to concerns of reprisals from staff (Koch, 1995). Another studies
reported adults viewed their hospitalization as ‘a process to manage’ and ‘endure by getting through it’ (Huckstadt, 2002; Jacelon, 2003).

Philosophical factors such as moral principles of charity, equality and ethics were reported. These moral principles are associated with professional ethics (American Nurses Association, 2001). The application of the ethical principles of autonomy and self-determination has been well reported within the literature although not specifically in relation to the adult inpatient fall phenomena. For example, the application of the ethical principles of autonomy and self determination are more closely associated with hospital processes such as informed consent. These influences resulted in the first care pattern of blaming, motivated by self care or the ‘autopilot’ pattern. This pattern is an expected and realistic consequence of supporting autonomy and self determination. More importantly, the application of professional ethics signifies culturally congruent care. This type of culture care should be preserved and maintained. Concerns about limiting autonomy and self determination in order to prevent adult inpatient falls have recently been reported. Specifically, limiting mobility through an increased use of physical restraint is a major concern (Inouye et al., 2009; Lach, 2010). The findings of this study provide the necessary evidence to contradict these concerns.

Kinship/social factors were described as receiving, providing, and missing supportive family care. Supportive family care was described as ‘family members assisting hospitalized patients’. Missing supportive family care was described as difficult and ‘hard’ during hospitalization. The inability to provide supportive family care during illness was described as having to ‘pull in my pride’. The influence of kinship/social
factors on health and wellbeing within healthcare institutions has been well reported within the literature. McFarland (2002) reported over 20 studies describing the influence of kinship/social factors on health and wellbeing within healthcare facilities worldwide.

Health and illness factors such as hospitalization, surgery, under the influence of medications and weakness were also reported by participants. These factors were described as ‘it takes away from me’, ‘you may think you feel good’, ‘you’re confident in walking, but don’t’, ‘weak as a kitten’ and those ‘legs had to sit down’. These influences resulted in the second care pattern of vulnerability during illness and the ‘caged animal’ pattern. This pattern is a reasonable outcome associated with these influences.

The Universal Theme I, contains competing forces of self care and vulnerability during illness while hospitalized. These competing forces culminated at discharge since patients are required to demonstrate self care activities. However, the ability to demonstrate self care activities vary due to the physical vulnerabilities associated with the acute care illness. With over half of the key informants in this study experiencing a fall event within 24 hours of discharge, this indicates new information. Further investigation is warranted in order to advance inpatient falls science.

It is understandable how these influences coalesced in order to maintain health and wellbeing, of which the hospital discharge aptly signifies. For example, both key and general participants described how maintaining independence through self care activities was supported by ethical principles and cultural lifeways. In addition, both key and general participants described the kinship/social factor, specifically family, as a significant influence on health and wellbeing. These influences are viewed as
contributory to the adult inpatient fall event. However, descriptions of providing culturally congruent care are also supported. Therefore, an unexpected consequence of providing culturally congruent care may be explanatory within the adult inpatient fall phenomena.

Universal Theme II: *Culture care of adults experiencing a fall while hospitalized involved mitigating risk in order to promote health and wellbeing and was influenced by educational and technological factors, and environmental context.*

The importance of the social structure factors of educational and technological factors and the environmental context was confirmed for Universal Theme II. The education factor was described by key informants as ‘they need to give you precautions, give you information, by talking to patients better and explaining to them’. However, general informant descriptors reported inpatient fall risk assessment processes as ‘just extra charting’, ‘I don’t talk to my patients about it at all’, and ‘it’s a standard way to convey a message, from nurse to nurse. Rarely do we ever communicate to a patient’. These descriptors signify the provision of culturally incongruent care.

General informants described the completion of the inpatient fall risk assessment scale as just ‘another thing to do’ and ‘It’s not helpful, it’s just paperwork’. This is not an uncommon practice from the perspective of institutional or critical ethnographers. Institutional ethnography explains everyday practices through the identification of translocal relations of ruling, thus creating ‘a sociology for people’ (Smith, 2007). Institutional ethnography describes the investigation of society through textually-mediated social practices resulting in ‘ruling relations’ and maintaining the institutional
status quo (Devault, 2006; Rankin, 2003). These influences resulted in the first care pattern of mitigating risk with use of the organization’s fall risk assessment scale, and the ‘lost in translation’ pattern.

The ‘lost in translation’ pattern is beginning to be reported in the literature (Carroll et al., 2010; Hill et al., 2011). In both studies, hospitalized patients reported falls prevention education as inadequate and confusing. This lack of information transfer is similar to flying without a flight plan. Care plans for hospitalized patients include assessments and diagnostics along with goals and expected outcomes. Diagnostics such as x-ray and lab values are translated back to each patient in the provision of quality patient care. Given that fall risk information is based upon an assessment of the patient, translating these results is necessary for the provision of quality nursing care. Moreover, these results belong to each patient as their property (Health & Human Services, 2003).

However, general informants did not view fall risk assessment results as belonging to the patient nor view this information as accurate. General informants reported problems with the efficacy of the fall risk assessment scale to accurately predict potential fallers from non-fallers. From a practice perspective, this validates what the literature describes (Table 4). General informant descriptors reported this lack of accuracy as ‘I think that people start almost ignoring it’, and ‘We have the fall risk scale. I don’t know if that really helps, because I mean, it’s just numbers’. Assessing for inpatient fall risk requires a psychometrically robust measurement scale. A psychometrically robust measurement scale is required in order to identify and differentiate potential fallers from non-fallers. Myers, (2003) reported over 32 fall risk
assessment scales in use nationwide however, “few have undergone validity and reliability testing” (p. 77). Validity and reliability testing of this organization’s inpatient fall risk assessment scale has not been reported (Poe, Cvach, Dawson, Straus & Hill, 2007). Thus, the development of a psychometrically robust fall risk assessment scale for use in hospitals nationwide is long overdue. Standardization would eliminate variation in the measurement of inpatient fall risk. The translation of inpatient fall risk processes and results should be accommodated and negotiated in order to provide culturally congruent care.

Physical environment issues such as problems with call lights, toilet height and work design problems were reported by participants. Key informants reported the inability to call for assistance because they could not ‘find the call light’. Female key informants described the toilets as ‘too low’ and ‘the person who designed that toilet couldn’t have been anything older than forty’. General informants reported the inability to observe patients from hallways and entry ways of the inpatient hospital room. Technology influences such as ‘slow computers’ and ‘a lack of lighting’ were also reported. These influences resulted in the second care pattern of mitigating risk within the physical environment and the ‘lay of the land’ pattern.

Mitigating risk within the physical environment has developed into a new area of research focus called evidence based design (EBD). Although a new area of research, these studies have begun to describe a relationship between design and patient outcomes. Lopez, Gerling, Cary, and Kanak (2009) reported system redesign strategies aimed at improving work processes ‘are required for decreasing the incidence of inpatient falls’ (p.
Barach and Dickerson (2006) reported ‘design processes for all healthcare environments needs to be radically changed to address patient safety challenges’ (p. 17). Ulrich and Zimring (2006) reported over 200 studies describing the influence of environmental and technological factors in the promotion of health and wellbeing within hospitals worldwide. This review included studies regarding the association of noise levels and patient and family sleep patterns in critical care and pediatric units. Included were studies about the relationship between sunlight and length of stay, depression and satisfaction. Interventional studies regarding ergonomics and decreased staff injury were also described. Many interventional studies reported statistically significant results regarding ventilation and hand hygiene protocols and the impact on hospital acquired infection (HAI) rates. Consequently, this research base contributed to the standardization of minimizing noise and artificial light levels in order to promote health and wellbeing within hospital settings. Moreover, this research base contributed to the standardization of hand hygiene protocols such as gels and location of dispensers.

As the EBD literature suggests, the science of design has promoted the standardization of patient safety practices. This standardization minimizes variation thereby facilitating quality patient outcomes. The variations reported by the participants about inadequate call light systems, toilet height and inpatient room design warrant further investigation. For example, the inability to call for assistance due to requiring patients to look for the call light is similar to requiring airplane pilots to look for the brake. Call lights are essential to the care of hospitalized patients, and therefore, patients should not be required to look for a call light. Additionally, the inability to observe
patients from hallways and entry ways of the inpatient hospital room is similar to requiring airplane pilots to fly without radar. The ability to observe patients from hallways, nurse’s stations and entry ways, is essential to the care of hospitalized patients. The risk for falling increases when toilets are too low and hospital bed design impedes repositioning. Call light systems, hospital beds and toilet height should be designed for optimal patient use. Additionally, inpatient rooms should be designed for optimal patient observation. The study of these variations and their relationship to inpatient falls would result in the standardization of optimal hospital design.

An increase in walking was also described by the nursing staff. An increase in walking due to the latest design focus for a ‘hotel’ impression in new hospital construction and renovation has been reported (Hendrich et al., 2009; Pati, Harvey, & Thurston, 2012). New hospital construction and renovation designs include all private hospital patient rooms, in order to match this ‘hotel’ design focus. This latest design focus has increased the square footage of the nurses work environment, with adult inpatient units growing by 118% (Latimer, Gutknecht, & Hardesty, 2008). A larger ‘hotel’ style private inpatient room, with larger distances between rooms and longer hallways has resulted in increased walking for nursing staff. Time spent walking represents time away from direct patient care. This is a waste and a nonproductive use of the professional’s time and expertise. The design of the hospital environment should be repatterned and restructured based on EBD research, in order to meets the physical needs of hospitalized patients.
It is understandable how these influences combined into competing forces of ‘safety’ and ‘risk’. Although use of the fall risk assessment scale and nurse call light system implied ‘safety’, the inadequate translation of fall risk processes and results along with inadequate hospital design issues resulted in additional ‘risk’. A lack of standardization in the design of a fall risk assessment scale and the hospital’s physical environment contributes and potentiates these competing forces. This signifies that the care provided was culturally incongruent. Subsequently, culturally incongruent care may be viewed as explanatory within the adult inpatient fall phenomena.

The Diverse Theme: **Culture care of adults experiencing a fall while hospitalized meant experiencing diversity in the efficacy of staffing patterns and was influenced by economic factors, kinship/social factors and political/legal factors.**

The importance of the social structure factors of economic, kinship/social and political/legal factors was confirmed for the Diverse Theme. Economic factors such as hospitals ‘can’t afford more nurses’ as well as ‘budget cuts’ for nursing staff were reported. This influence of ‘can’t afford more nurses’ resulted in a ‘lack of attention’. Kinship/social factors such as supportive family care, communication and collaboration were reported. These influences resulted in diverse care experiences from ‘I was being taken care of, and everything that they were doing was for my good’ to ‘traumatizing’ and ‘ineffective’ patient care. Political/legal factors such as the Staffing by Acuity and Hospital Report Card statutes (Illinois General Assembly, 2004, 2008) influenced this culture care pattern as well. These variations or diversity in the efficacy of staffing patterns resulted in waiting, or ‘flying standby’.
It is understandable how these influences resulted in adults experiencing diversity in the efficacy of staffing patterns. Participants described how the economic factor of budget cuts influenced communication and collaboration. Participants described political/legal factors such as the state’s Hospital Report Care Act (Illinois General Assembly, 2004) and Staffing by Acuity Act (Illinois General Assembly, 2008) as influencing staffing pattern variations. These variations or ‘turbulence’ were associated with the day of the week as well as the time of the day. Moreover, half of the inpatient fall events within this study occurred during the night shift, and 40% occurred on a weekend (Table 7). This signifies culturally incongruent care was provided and may be explanatory of the adult inpatient fall event.

The diversity in the efficacy of staffing patterns indicates variations in care and has been well described in the literature (Institute of Medicine, 2004 b). Further, it has been reported that three types of hospital care reside in one building – day shift, night shift, and weekend/holiday care (Bell & Redelmeier, 2001; Kostis et al., 2007; Schilling, Campbell, Englesbe, & Davis, 2010). Weekend admissions were associated with higher mortality rates for 23 out of 100 medical diagnosis of over 3 million Canadian patients from 1988 to 1997 (Bell & Redelmeier, 2001). In the interval from 1999 to 2002 and reviewing 59, 786 admissions, Kostis et al. (2007) reported a higher mortality rate for patients admitted on weekends (p = 0.006). Schilling et al. (2010) reported weekend admissions increased the absolute risk of mortality (0.32; 95% CI, 0.11-0.54). Interestingly, an ‘increased nurse staffing levels decreased the absolute risk of mortality
by 0.25 percentage points (95% CI, 0.04-0.48) for each additional full-time equivalent nurse per patient-day’ was also reported (Schilling et al. 2010, p. 224).

These descriptions of variations in the standard of care are due to staffing pattern variations based on ‘shift’ assignment. The term ‘off shift’ is used to describe work shifts other than day shift, Mondays through Fridays. These ‘off shift’ assignments include nights, weekends and holidays. Perhaps the term ‘off shift’ also indicates care that is ‘off’ due to this variability. Researchers are beginning to study shift variation and its association with the NSQO of adult inpatient falls. For example, Patrician et al. (2011) reported, “a 15% to 51% increase in falls with each decrease of one hour of nurse care per shift” (p.68). Variations in the standard of care due to staffing pattern ‘turbulence’ are similar to flying airplanes with a compromised crew. A full complement of staff, regardless of shift assignment for nights, weekends and holidays, is essential to the care of hospitalized patients. Patient care should not be compromised due to staffing pattern variation based on shift assignment. Nurse staffing patterns should be repatterned and restructured in order to minimize variations in the care provided to hospitalized patients.

In summary, the culture care themes and their sociocultural influences associated with the adult experiencing a fall while hospitalized were discussed. These thematic culture care patterns provided new information as well as confirmed existing knowledge. These discoveries directed the final step of the ethnonursing research method. In the next section, these findings will be discussed in accordance with Leininger’s (2001, 2006) three modes of nursing actions, inclusive of implications for nursing practice, administration and education.
Nursing Care Modalities

The provision of culturally congruent care is the main goal of Culture Care Diversity and Universality theory (Leininger 2001, 2006). Within this theory, there are three major care modalities which guide nursing decisions and actions. These modalities are: (1) culture care preservation/maintenance, (2) culture care accommodation/negotiation, and (3) culture care repatterning/restructuring.

The modalities facilitate nurse’s actions and decisions, in order to meet the health and wellness needs of hospitalized patients in a culturally congruent manner (Leininger, 2001, 2006). Based on the discoveries within this study, the following culturally congruent nursing care decisions and actions are recommended. These recommendations are based upon the meanings, expressions, and patterns of culture care discovered within the adult inpatient fall phenomena. Table 10 provides a summary of these recommendations based upon the Culture Care theory (Leininger 1988, 2001).

Culture Care Preservation/Maintenance for Self Care Despite Vulnerability Due to Illness

Leininger defines culture care preservation/maintenance as “those assistive, supportive, facilitative, or enabling professional acts or decisions that help cultures to retain, preserve, or maintain beneficial care beliefs and values” (Leininger & McFarland, 2006, p. 8). Adult hospitalized patients need the support of nurses as they maintain beneficial care beliefs, values, and expressions for self care during their vulnerability due to illness.
Implications for nursing practice. According to anthropological data, “self care adaptations are a part of man’s human nature and survival” (Leininger, 1970, p. 32). Implications for nursing practice include the application of these results to anticipate, facilitate and support patient expressions for self care. Practice implications include anticipating the expression for self care such as toileting after the administration of diuretics versus timed hourly rounds, as currently prescribed within hospital protocols. Practice implications include recognizing and anticipating the expression for self care such as dressing and the gathering personal belongings during the discharge process.

Based on the results of this study, licensed nurses should garner an understanding and appreciation of the ‘blame game’ that occurs within the adult inpatient fall phenomena. This type of blame game resulted in negative outcomes. Negative outcomes such as patients’ not trusting their self care abilities is counterintuitive to the nature of care/caring for hospitalized patients. Practice implications include supporting patient expressions for self care of which inpatient falls may be viewed as an unintended consequence. This view of inpatient falls as an unintended consequence secondary to supporting patient expressions for self care requires additional organizational involvement. Organizational involvement requires the support of nurse administrators, and is described in the next section.

Implications for nursing administration. Nurse administrators focusing on a broad interpretation of preventability facilitate a systems level approach for addressing inpatient falls (Institute of Medicine, 2004d, p. 268). For example, a systems level approach would include input from other hospital departments such as pharmacy and
environmental services. A pharmacological review of inpatient medications for possible synergistic effects could reduce fall and fall related injuries. Input from environmental services would address issues such as lighting at night, toilet height and room design. By focusing on a broad systems level approach, nurse administrators facilitate and support patient expressions for self care.

This broad interpretation of preventability minimizes an individual level focus. Inherent within an individual level approach, is the cycle of fear, of which blame and shifting the blame is a first response (Institute of Medicine, 2004d, p. 265). Undoubtedly, this blame game impedes professional care/caring for hospitalized patients. Further, Kurtzman et al., (2011) reported pay for performance (P4P) incentives potentially create an environment in which nurses are blamed for hospital acquired conditions such as injury from falls. However, nurse administrators could leverage these incentives. For example, P4P incentives can be used for the appropriation of effective staffing patterns. Kavanagh, Cimiotti, Abusalem, and Coty, (2012) propose a national movement toward nursing sensitive value based purchasing (NSVBP). The main premise of this proposal is to closely link reimbursements for NSQO. At the national level, value based purchasing is already occurring. In addition, participation in a national NSQO database registry has been proposed as a requirement for hospital accreditation. This proposal is a first step towards NSVBP in order to incentivize and nationalize NSQO (Centers for Medicare & Medicaid, 2010). Nurse administrators have the opportunity to apply these incentives for the optimization of effective staffing patterns.
Implications for nursing education. Implications for nursing education include teaching students about anticipating, facilitating and supporting patient expressions for self care, along with the tenets of quality and safety. The training and education of nursing students on the tenets of quality and safety enables professional care/caring for hospitalized patients.

The American Association of Colleges of Nursing (2012) developed quality and safety education for nurses (QSEN). The QSEN program articulates essential knowledge, skills, and attitudes (KSA) for undergraduate and graduate programs (Cronewett et al., 2007). Topics such as patient centered care, teamwork and collaboration, evidence based practice, quality improvement, safety and informatics are described as core competencies. The QSEN program provides nurse educators with the necessary information to meet these core competencies within curricula.

Culture Care Accommodation/Negotiation and the Translation of Inpatient Fall Risk

Leininger defines culture care accommodation/ negotiation as “those assistive, accommodating, facilitative, or enabling creative provider care actions or decisions that help cultures adapt to or negotiate with others for culturally congruent, safe, and effective care for their health and wellbeing” (Leininger & McFarland, 2006, p. 8). Adult hospitalized patients need the support of nurses for the accommodation and negotiation of inpatient fall risk assessment processes and results.

The Institute of Medicine (2001b) reported the frustration patients experience with their inability to participate in decision making, obtain information, and participate
in a system of care that is responsive to their needs (p. 49). Information increases the patient’s knowledge in order to actively participate in shared decisions as well as provide opportunities for shared views and preferences. This reflects several dimensions of patient centered care including respect for patient values, preferences, and expressed needs as well as provides information, communication and education.

Implications for nursing practice. The rights of patients to be informed decision makers is well accepted however, not always implemented. As such, translation of inpatient fall risk assessment processes and results ‘missed the connection’ as reported within this study. This ‘lost in translation’ care pattern is not uncommon. Dempsey (2009) and Lea et al. (2012) reported inpatient fall risk assessment processes and results as separate and disconnected from direct patient care interactions.

Implications for nursing practice include using these study results to accommodate and negotiate the translation of inpatient fall risk assessment processes and results. Explanations and conversations about these processes and scale results with patients are recommended. For example, a major practice goal should include ‘buy in’, as reported in the following descriptor:

G 5b: You know, finding out how to get the buy in with the person, you know, like, ‘you’re not always going to be this dependent, you’re not always going to be this weak, but for right now, you’re not going to be able to do it on your own’ and they just had their sternum split open so they’re missing a lot of their upper body strength too. If they've had one leg opened up with the saphenous vein, they've got a little balance issue because they've got pain and tenderness (p. 5, lines 0176-0190).

This type of ‘buy in’ requires open communication and information sharing. Openly communicating and sharing assessment processes and results, accommodates and
negotiates the translation of fall risk. This nursing practice is essential for the provision of professional care/caring for hospitalized patients.

**Implications for nursing administration.** The implications for nursing administration include using these study results to accommodate and negotiate the translation of inpatient fall risk assessment processes and results. Nurse administrators are in the unique position of addressing this nursing care modality through the implementation of hospital wide programs. Organizational programs such patient and family participation in committees and simulation and smart technology along with skill validation is recommended.

Patient and family participation as members of the organization’s inpatient falls committee would provide value-added information sharing. Organizational simulation programs would include case study presentations of how to explain and communicate inpatient fall risk assessment processes and results. These communication exercises would simulate the translation of inpatient fall risk between community members, such as patients and/or their families and staff. These types of programs truly demonstrate several dimensions of the patient centered care concept.

Smart technology includes the remote monitoring of patient information such as vital signs and mobility while interfacing with the organization’s electronic information system (Burns Bolton, Gassert, & Cipriano, 2008; Visvanathan, Ranasinghe, Torres & Hill, 2012). The technology collects and downloads these measurements along with patient location and movement within the bed, room and bathroom. Moreover, bedside hardware allows patients and their families to communicate directly with their nursing
staff. This smart bed technology accommodates and negotiates the translation of inpatient fall risk assessment processes and results. Skill validation of using this technology would be administered annually.

Organization programs such as an evidence base review committee or research utilization committee for ongoing staff engagement in the evaluation of evidence related to falls and fall risk management. The unique position of nursing administration to implement these types of organizational programs enables the provision of professional care/caring for hospitalized patients.

Implications for nursing education. Nursing education implications include the use of these study results to accommodate and negotiate the translation of inpatient fall risk assessment processes and results. Undergraduate nursing education curricula should include business acumen along with focused communication strategies and techniques. Although important, current communication training focuses on inter-professional techniques such as the ‘situation, background, assessment, and recommendation’ or SBAR technique (Leonard, Graham, & Bonacum, 2004). The next phase of communication training must include a focus on patient techniques. Course curriculums should include how to communicate with patients in a shared and fully open manner in order to support decision making and self management.

Other implications for nursing educators include the creation of a multilevel framework for simulation. This framework would enable simulation to be performed at different levels with passing information from one level to another. As such, communication simulation exercises would be formulated for the transfer of information
between undergraduate, graduate, and hospital practitioners (Eldabi, Paul, & Young, 2007). In order to facilitate professional care/caring for hospitalized patients, all levels of students and practitioners should be educated and trained regarding the translation of inpatient fall risk assessment processes and results.

**Culture Care Repatterning/Restructuring and Remodeling the ‘Lay of the Land’**

Leininger defines culture care repatterning/restructuring as “those assistive, supportive, facilitative, or enabling professional actions and mutual decisions that would help people reorder, change, modify or restructure their lifeways and institutions for better (or beneficial) health patterns, practices, or outcomes” (Leininger & McFarland, 2006, p. 8). Culture care needs arose from the meanings, expressions, and patterns of the adult inpatient experiencing a fall while hospitalized. Nurses can meet those needs through culture care repatterning/restructuring of the environmental context.

The repatterning/restructuring of the environmental context would include further evaluation of nurse staffing patterns. Specifically, an examination of night/weekend staffing and inpatient fall rates is recommended. Findings within current nurse staffing literature were reported in aggregate or ‘total hours per patient day’. Additional studies examining shift variation and inpatient fall and injury rates would yield a more precise effect of the nurse staffing variable. This evidence is needed for the culture care repatterning/restructuring of the environmental context.

The repatterning/restructuring of the environmental context would also include an evaluation of the built environment through evidence based design research. Evidence based design (EBD) is defined as the, “process of basing decisions about the built
environment on credible research to achieve the best possible outcomes” (Center for Health Design, 2010). The main goal of EBD is to address the impact of physical surroundings on patient safety, quality, and efficiency in hospitals, community health centers, and long term care facilities. EBD is a new area of research focus and supported by a small but growing body of literature (Chaudhury, Mahmood, & Valente, 2009; Lorenz & Dreher, 2011; Reiling, Hughes, & Murphy, 2008).

**Implications for nursing practice.** Practice implications for the culture care repatterning/restructuring and the remodeling of the ‘lay of the land’ includes direct care nurse input. Nurses participating staffing and quality improvement committees within the organization should evaluate nurse staffing patterns along with shift variations compared to inpatient fall rates. These evidence based projects could result in the culture care repatterning/restructuring of the environmental context.

The Institute of Medicine (2004e) recommends the involvement of direct care nurses “throughout all phases” of the design of work environments and care processes to reduce errors (p. 276). This involvement is essential to the interplay between the physical, technological and human factors influences found within the design of healthcare facilities (Malone, Mann-Dooks, & Strauss, 2007). The implications for nursing practice include participation in new construction and renovation design projects as well as membership of professional organizations such as the Nursing Institute for Healthcare Design (2012). Additionally, many nurses complete certification in order to be proficient about EBD research and its impact on patient outcomes (Health Design, 2010). These
examples demonstrate the nursing practice of culture care repatterning/restructuring and remodeling the ‘lay of the land’.

**Implications for nursing administration.** The Institute of Medicine (2004e) recommends that hospitals “provide nursing leadership with the resources necessary to design work environments and care processes for the reduction of errors” (p. 276). Resources such as time and money are essential to the repatterning/restructuring of the ‘lay of the land’. These resources are under the authority and responsibility of nurse administrators. For example, the chief nursing officer at Dublin Methodist Hospital in the state of Ohio reported, ‘hand selecting nurses to help plan and design’ the construction of a new hospital (Robert Wood Johnson Foundation, 2010, p. 2). Another example included scheduling nurses to ‘test new design ideas’ at Kaiser Permanente’s Healthcare Innovation Center in northern California (Robert Wood Johnson Foundation, 2010, p. 2). These new clinical liaison roles within planning and design teams included compensated time off from direct care nurse responsibilities.

Professional membership within the Facility Guidelines Institute (FGI) is also recommended for nurse administrators. The objective of the FGI is to review, revise and publish the *Guidelines for Design and Construction of Health Care Facilities* (2010). Originally, appearing in the Federal Register of 1947 as part of the Hill-Burton program, these guidelines have a long history of use by state authorities for jurisdiction with licensure and regulation (Facilities Guideline Institute, 2010). Funding for each cycle’s publication is provided by the Department of Health and Human Services (DHHS), Centers for Medicare and Medicaid (CMS) division.
These guidelines are revised and updated in order to “keep pace with evolving healthcare needs and in response to requests for up to date guidance from healthcare providers, designers and regulators” (Facilities Guideline Institute, 2010, p. xvii). Participation in the FGI’s Health Guidelines Revision Committee (HGRC) would be ideal, as only a seven nurses are current members within the 116 member committee group. Nurse participation could potentially lead to the standardization of hospital design elements such as visualization of patients from room entry ways, hallways and nurses stations.

Additionally, implications for nursing administration include the facilitation of patient and family participation within the planning of hospital design and renovation. Inclusion of patients, families and community members within the organization’s design committee would enable value-added stakeholder information. Organizational committees reviewing the evidence associated with nurse staffing pattern variation and adult inpatient fall and injury rates is also recommended. These recommendations for nursing administration enable professional care/caring for hospitalized patients through the nursing care modality of culture care repatterning/restructuring and remodeling the ‘lay of the land’.

**Implications for nursing education.** The implications for nursing education are three fold: (1) hospital design concepts should be included within baccalaureate level programs, (2) hospital design application should be included within graduate level programs, and (3) inter-professional programs for knowledge and skill integration across disciplines should be created. This culture care repatterning/restructuring and the
remodeling of the ‘lay of the land’ have recently been initiated within nursing education programs. For example, the undergraduate nursing program at Holy Names University in Oakland, California requires students to enroll in an evidence based design course (Robert Wood Johnson Foundation, 2010). Students learn about EBD research and its impact on patient outcomes. Topics include acuity-adaptable patient rooms as well as other design elements such as earthquake safety guidelines.

At Texas Woman’s University School of Nursing, graduate level courses are available for students to learn about spatial awareness, how to read architectural drawings, and review the scientific literature about EBD and its impact on patient outcomes (Robert Wood Johnson Foundation, 2010). Students also learn to design and build full scale prototypes for specific patient populations within the acute care setting. This type of learning teaches active design participation as well as how design affects patient care.

An inter-professional design program was implemented at Arizona State University. This program emphasizes, “problem solving skills grounded in an understanding of the interplay among clinical practice, technology, architecture, finance and other aspects of health care delivery” (Robert Wood Johnson Foundation, 2010, p. 7). Developed in collaboration between the Arizona State University Colleges of Nursing and Health Innovation and the Herberger Institute for Design and the Arts, the program offers master and doctoral level inter-professional courses for nurses, architects, designers and other healthcare professionals. These examples illustrate culture care repatterning/restructuring and the remodeling of the ‘lay of the land’ by nursing
education. Professional care/caring for hospitalized patients require this educational focus.

In summary, the culture care themes and their sociocultural influences associated with the adult experiencing a fall while hospitalized were discussed in accordance with Leininger’s (2001, 2006) three modes of nursing actions. The implications for nursing practice, administration and education were also discussed. In the next section, the study’s limitations as well as recommendations for future research are presented.

**Limitations**

These findings were discovered based on the culture care meanings, expressions, and patterns related to adult inpatient falls within an urban academic medical center. Therefore, generalizability to other settings and populations is limited. Further, this study excluded assisted or ‘near miss’ inpatient falls. This sampling design adhered to a mini ethnonursing research focus (Figure 4). However, the study of culture care meanings, expressions, and patterns related to assisted or ‘near miss’ inpatient falls is recommended.

**Recommendations for Future Research**

This research informs the need for further investigation of the adult inpatient fall phenomena. Recommendations for future research include additional ethnographic studies and more traditionally defined general studies.

**Ethnographic Recommendations**

This ethnonursing research focused on the culture care meanings, expressions, and patterns related to adult inpatient falls in an urban academic medical center. This research is the first comparative ethnographic study related specifically to adults
experiencing a fall while hospitalized. Based on these discoveries, the following future research studies are recommended:

1. A comparative ethnonursing study of translating inpatient fall risk assessment processes and results, from the perspectives of patients and nurses, in order to discover culture care meanings, expressions and patterns.

2. A comparative ethnonursing study of assisted or ‘near miss’ (Institute of Medicine, 2004c) inpatient falls, from the perspectives of patients and nurses, in order to discover culture care meanings, expressions and patterns.

3. A comparative ethnonursing study of inpatient falls in acuity-adaptable patient rooms, from the perspectives of patients and nurses, in order to discover culture care meanings, expressions and patterns.

4. A comparative ethnonursing study of adults experiencing a fall while in a skilled or long term care facility, from the perspectives of patients and nurses, in order to discover culture care meanings, expressions and patterns.

**General Recommendations**

In order to advance the state of the science, further investigation of the adult inpatient fall phenomena is warranted. Based upon the findings of this ethnographic study, the following general research studies are recommended:

1. The development and testing of a psychometrically robust adult inpatient fall risk measurement scale.

2. Subsequent implementation studies of the new robust adult inpatient fall risk measurement scale.
3. A longitudinal examination of the association between the new robust adult inpatient fall risk measurement scale and fall and injury rates.

4. Empirical studies on the effects of hospital design and equipment and adult inpatient fall and injury rates.

5. Empirical studies on the effects of night/weekend staffing and adult inpatient fall rates.

6. Studies designed to develop ‘best practices’ for the inclusion of patients, families, and community members in the planning phases of hospital new construction and renovation.

Summary

A discussion of the major findings discovered in this ethnonursing study was presented in this chapter. The culture care themes and their sociocultural influences associated with the adult experiencing a fall while hospitalized were discussed. A major premise of the ethnographic theoretical framework of the Culture Care theory is the influence of social structure factors (Leininger 1990, 2006). In this study, the thematic findings were embedded within the social structure dimension of the hospital setting.

For Universal Theme I, the importance of the social structure factors of cultural life ways, philosophical and kinship/social factors was confirmed. These social structure factors have been reported in the literature as important influences to the health and wellbeing of hospitalized patients (American Nurses Association, 2001; Huckstadt, 2002; Jacelon, 2003; Koch, 1995; Latimer, 1999; McFarland, 2002). However, the influence of these factors on the adult inpatient fall phenomena represents new information.
For Universal Theme II, the importance of the social structure factors of educational and technological factors and the environmental context was confirmed. The education factor was described by key informants as ‘needed’ and general informant descriptors reported inpatient fall risk assessment processes as ‘just extra charting’ and ‘I don’t talk to my patients about it at all’. This lack of translating evidence and information is beginning to be reported in the literature (Carroll et al., 2010; Hill et al., 2011). Physical environment issues such as problems with call lights, toilet height and work design problems were reported. Key informants reported the inability to call for assistance because they could not ‘find the call light’. General informants reported the inability to observe patients from hallways and entry ways. Technology influences such as ‘slow computers’ and ‘a lack of lighting’ were also reported. The influence of these social structure factors to the health and wellbeing of hospitalized patients is supported in EBD literature (Barach & Dickerson, 2006; Hendrich et al., 2009; Lopez et al., 2009; Pati et al., 2012; Ulrich & Zimring, 2006). However, the influence of these factors on the adult inpatient fall phenomena represents new information.

For the Diverse Theme, the importance of the social structure factors of economic, kinship/social and political/legal factors was confirmed. These influences resulted in adults experiencing diversity in the efficacy of staffing patterns. Participants described how the economic factor of budget cuts influenced communication and collaboration. Participants described political/legal factors as influencing staffing pattern variations. These variations or ‘turbulence’ were associated with the day of the week as well as the time of the day. Moreover, half of the inpatient fall events within this study
occurred during the night shift, and 40% occurred on a weekend (Table 7). Problems associated with shift variation are beginning to be reported in the literature (Patrician et al., 2011). Weekend admissions, for example, resulted in higher hospital mortality rates (Bell & Redelmeier, 2001; Kostis et al., 2007; Schilling et al., 2010).

Findings were discussed in relation to Leininger’s (2001, 2006) three modes of nursing actions, inclusive of implications for nursing practice, administration and education (Table 10). These modalities facilitate nurse’s actions and decisions, in order to meet the health and wellness needs hospitalized patients (Leininger, 2001, 2006). Based on the discoveries within this study, the following culturally congruent nursing care decisions and actions are recommended: (1) adult hospitalized patients need the support of nurses as they maintain beneficial care beliefs, values, and expressions for self care during their vulnerability due to illness; (2) adult hospitalized patients need the support of nurses for the accommodation and negotiation of inpatient fall risk assessment processes and results; and (3) adult hospitalized patients need the support of nurses for the repatterning/restructuring of the environmental context. These recommendations are based upon the meanings, expressions, and patterns of culture care discovered within the adult inpatient fall phenomena.

Implications for nursing practice, administration and education were included within these recommendations. Examples for nursing practice include anticipating expressions for patient self care, translating fall risk assessment processes and results to patients and their families, and participation in new construction and renovation design projects. Examples for nursing administration include a systems level approach for
addressing inpatient falls. This can be achieved through the implementation of hospital wide programs such patient and family participation in committees as well as professional membership within Facility Guidelines Institute (FGI) and Nursing Institute for Healthcare Design (NIHD). This systems level approach facilitates evidence based design (EBD) standards and patient centered care practices. Examples for nursing education include curricula incorporating the QSEN program (American Association of Colleges of Nursing, 2012), communication training with a focus on patient techniques, and hospital EBD concepts and application. Study limitations along with recommendations for future research were also presented.

**Conclusion**

Despite a long professional history of concern and the subsequent preponderance of research, inpatient falls remain a serious problem for patients, their families, healthcare providers and organizations. The equivocal evidence reported within the state of the science served as the basis for this study. Although the majority of previous research focused on variables associated with the Donabedian (1966, 2003) framework, this research examined contextual variables associated with translation knowledge/science (Rycroft-Malone, 2004, 2007; Titler, 2004, 2008). These contextual variables included the constructs of culture and care and their respective sociocultural influences such as language, philosophy of life, kinship, politics, economics, education, technology, and the environmental context (Cummings et al., 2007; Leininger, 2006; Long et al., 2008; McCormack et al., 2002; Scott & Pollack, 2008; Vangrgeest & Finkler, 2004). Contributors to patient safety research are currently recommending the inclusion these
variables for the next phases of patient safety studies. Shekelle et al. (2010) reported external factors such as regulatory requirements, organization structural characteristics, and teamwork and management tools such as staff development as ‘high priority’ patient safety variables. This study corresponds with many of these high priority recommendations.

The examination of culture and care and their sociocultural influences required an ethnographic approach (Fetterman, 2010; Hunter et al., 2008; LeComte & Schensul, 2010). The theoretical framework of the Culture Care theory (Leininger 1988, 2001) uses ethnography, ethno science and ethnonursing research methods. Using this methodological lens provided the most appropriate tool for ‘opening the black box’ to understand the processes of nursing care regarding adult inpatient falls. Subsequently, the constructs of culture and care and their sociocultural influences within the adult inpatient fall phenomena have been discovered. The identification of intersecting culture care meanings, expressions and patterns and their sociocultural influences has been explanatory of the adult inpatient fall phenomena. This identification has been instructional for understanding ‘what happened’, since inpatient falls can literally be interpreted as a patient crash. The ethnographic theoretical framework of the Culture Care theory (Leininger 1988, 2001) methodologically ‘opened the black box’ for the examination of the adult inpatient fall crash in order to understand what happened, proving to be effective at revealing important elements of context. According to Leininger (1970), patients have a right to have their sociocultural backgrounds understood and states that her theory is based on the ‘interrelationships of culture and
care’. Subsequently, the term ‘culture care’ refers to a synthesis of the constructs of culture and care from both ‘emic’ and ‘etic’ perspectives (Leininger & McFarland, 2006). Moreover, the emic perspective allowed for the discovery of the ‘expert’ view, which is a true expression of patient centered care and translation science. The etic perspective allowed for the discovery of culture, which is a true expression of ethnography.

Themes were generated using the ethnonursing method and were derived from adult inpatients that fell during their hospital stay (emic) as well as from nursing staff that had direct knowledge about the inpatient fall event (etic). Two universal themes and one diverse theme and their respective sociocultural influences were abstracted from participant descriptors and patterns (Table 9). The three themes reflect the similarities and differences of culture care related to adults experiencing a fall while hospitalized:

- Universal Theme I: Culture care of adults experiencing a fall while hospitalized included blaming, motivated by self care despite their vulnerability during illness in order to maintain health and wellbeing and was influenced by cultural lifeways, philosophical factors and kinship/social factors was discovered as a universal theme for participants. Two patterns underpinning Theme I, was discovered from observations, descriptors and raw data: (1) adults experiencing a fall while hospitalized included blaming, motivated by self care, and (2) adults experiencing a fall while hospitalized involved vulnerability during illness.

- Universal Theme II: Culture care of adults experiencing a fall while hospitalized involved mitigating risk in order to promote health and wellbeing and was influenced by educational and technological factors, and environmental context
was discovered as a universal theme for participants. Two patterns underpinning Theme II, was discovered from observations, descriptors and raw data: (1) adults experiencing a fall while hospitalized involved mitigating risk with use of the organization’s fall risk assessment scale, and (2) adults experiencing a fall while hospitalized involved mitigating risk within the physical environment.

- The Diverse Theme: *Culture care of adults experiencing a fall while hospitalized meant experiencing diversity in the efficacy of staffing patterns and was influenced by economic factors, kinship/social factors and political/legal factors* was discovered as a diverse theme for participants. One care pattern underpinning the Diverse Theme, was discovered from observations, descriptors and raw data: adults experiencing a fall while hospitalized meant experiencing diversity in the efficacy of staffing patterns, and ‘turbulence’ patterns.

Leininger (2002) defined nursing as a “learned humanistic and scientific profession and discipline focused on human care phenomena and caring activities in order to assist, support, and facilitate or enable individuals, or groups to maintain or regain their health or wellbeing in culturally meaningful and beneficial ways” (p. 46). These caring activities must be placed within a cultural context allowing congruence between emic (insiders) and etic (outsiders) viewpoints. The ethnonursing research method allowed for the discovery of emic and etic viewpoints. These discoveries revealed common and diverse culture care meanings, expressions and patterns associated with the adult inpatient fall phenomena. Of significance, the ‘voice of the patient’ has now been included within NSQO research. Contributors to patient centered outcomes
research are currently recommending engaging patients in healthcare research (Garces et al., 2012). This study meets this recommendation and consequently, provided the necessary ‘expert’ knowledge for understanding adult inpatient falls.

A major premise of the ethnographic theoretical framework of the Culture Care theory is the influence of social structure factors (Leininger 1990, 2006). The thematic findings were embedded within the social structure dimension of the hospital setting. The importance of the social structure factors of cultural life ways, philosophical and kinship/social factors was confirmed in Universal Theme I. Participants described how maintaining independence through self care activities was supported by the ethical principles of autonomy and self determination. Participants described the kinship/social factor of family as a significant influence on health and wellbeing. These sociocultural influences have been reported within the literature, but not specifically in relation to the adult inpatient fall phenomena.

The importance of the social structure factors of educational and technological factors as well as the environmental context was confirmed in Universal Theme II. The education factor of not translating fall risk assessment processes and results was reported by the participants. The ‘missed connection’ of not translating this information may be explanatory as to the equivocal evidence associated with inpatient fall translation science studies (Table 6). Therefore, this discovery adds new information to translation/knowledge science. Physical environment issues such as problems with call lights, toilet height and work design problems were also reported. These design issues may be explanatory as to the equivocal evidence associated with fall prevention studies
Interventions reported within these studies excluded design. Therefore, this discovery adds new information to EBD science.

The importance of the social structure factors of economic, kinship/social and political/legal factors was confirmed for the Diverse Theme. These influences resulted in adults experiencing diversity in the efficacy of staffing patterns. Participants described how the economic factor of budget cuts influenced communication and collaboration. Participants described political/legal factors such as the state’s Hospital Report Care Act (Illinois General Assembly, 2004) and Staffing by Acuity Act (Illinois General Assembly, 2008) as influencing staffing pattern variations. These variations or ‘turbulence’ were associated with the day of the week as well as the time of the day. Moreover, half of the inpatient fall events within this study occurred during the night shift, and 40% occurred on a weekend (Table 7). Shift variation may be explanatory as to the equivocal evidence associated with nurse staffing studies and NSQO (Table 3). Variables used in current nurse staffing studies were reported in aggregate or ‘total hours per patient day’. These discoveries add new information to NSQO science.

The framing of these discoveries within the current literature and Leininger’s (2001, 2006) nursing care modalities suggest opportunities for professional care/caring (Table 10). These modalities facilitate nurse’s actions and decisions, in order to meet the health and wellness needs hospitalized patients (Leininger, 2001, 2006). Based upon the discoveries within this study, the following culturally congruent nursing care decisions and actions are recommended: (1) adult hospitalized patients need the support of nurses as they maintain beneficial care beliefs, values, and expressions for self care during their...
vulnerability due to illness; (2) adult hospitalized patients need the support of nurses for the accommodation and negotiation of inpatient fall risk assessment processes and results; and (3) adult hospitalized patients need the support of nurses for the repatterning/restructuring of the environmental context.

A focused improvement of culture care repatterning/restructuring and remodeling the ‘lay of the land’ and culture care accommodation/negotiation and the ‘translation of inpatient fall risk’, would undoubtedly enhance the culture care preservation/maintenance of ‘self care despite vulnerability’. For example, inpatient room redesign along with translating fall risk assessment processes and results would provide a safer hospital context. Subsequently, expressions of self care would potentially carry less risk. A system improvement focus rather than an individual failure focus is therefore recommended. An improvement of these system failures (physical design issues, knowledge translation, and staffing pattern variations) versus the ‘blame game’ of an individual failure focus is required in order to be truly ‘duty free’. The following general informant descriptor summarizes this pattern:

G 5b: It’s disheartening because you always try to give the absolute best care that you can and it’s kind of a little bit of an emotional letdown when it’s your patient. You get that sinking feeling in the pit of your stomach like, oh, my gosh, what could I have done and it’s just a frustration (p. 22, lines 0913-0922).

The recognition of self care expressions as a part of human nature must not preclude additional efforts aimed at the prevention of adult inpatient falls. But until the evidence supports the use of a psychometrically robust fall risk scale and the translation of this information to patients, it is a reasonable assumption for inpatient falls to continue to be viewed as a medical error. Until hospitals are designed and renovated based on the
science of preventing adult inpatient falls, it is understandable that inpatient falls continue to be defined as an adverse event. With half of adult inpatient falls occurring on the night shift when nurse staffing levels are decreased, it is a reasonable inference when these events continue to be described in terms of inadequate quality nursing care. Systems level improvements would promote the health and wellbeing of hospitalized patients in a culturally congruent manner. Without these systems level improvements, expressions for self care will continue to carry risk and negative connotations of blame.

This study depicts a holistic perspective of multiple factors that can influence care and presents culture care as a full and total perspective of the essence of nursing (Leininger & McFarland, 2002). The findings suggest a new paradigm to view the adult inpatient fall event. This paradigm includes culture care as integral to these phenomena. Culturally congruent care includes the facilitation, support and expressions for self care. These expressions may result in the untended consequence of the adult inpatient fall event. Subsequently, this new paradigm includes a broader interpretation of preventability.

In conclusion, these discoveries advance the state of our understanding adult inpatient falls. This understanding is necessary for the provision of culturally congruent and nursing sensitive quality care. The following key informant descriptor saliently, albeit briefly, sums up the totality of this ethnonursing research study:

K 6: Nobody likes being in the hospital, but if you've got to go, you've got to go, to get better that’s all. And get back to your life (p. 37, lines 1205-1208).
APPENDIX A:

STUDY PROTOCOL FLYER DISTRIBUTED TO NURSING MANAGEMENT
AND KEY AND GENERAL PARTICIPANTS
Title: Understanding Adult Inpatient Falls

Purpose: The purpose of this study is to discover and analyze the meanings, expressions, and patterns of care associated within the adult inpatient falls phenomena. The goal of this study is to use these findings to provide culturally congruent nursing care in order to meet the needs of hospitalized adults.

Eligibility Criteria: Adult inpatients that have fallen during their hospital stay, as well as hospital staff that has direct knowledge about the inpatient fall event.

Treatment Description: A qualitative ethnographic study using the Leininger (1990, 2006) ethno nursing research method will be used. Data will be collected using either face to face or telephone interviews. Interviews will be conducted during the hours of 0900 to 2100, seven days a week. These interviews will be based upon convenience, including time and location, in order not to disrupt daily routines.

Enrollment and Contact Information: Laura Rogers RN, PhD student - Call 847-800-8264, or email lroger1@luc.edu
APPENDIX B:

LEININGER’S SUNRISE ENABLER TO DISCOVER CULTURE CARE
Leininger’s Sunrise Enabler to Discover Culture Care

CULTURE CARE

Worldview
Cultural & Social Structure Dimensions

Kinship & Social Factors
Cultural Values, Beliefs & Lifeways
Political & Legal Factors

Environmental Context, Language & Ethnohistory

Religious & Philosophical Factors
Economic Factors

Technological Factors
Educational Factors

Influences

Care Expressions Patterns & Practices

Holistic Health / Illness / Death

Focus: Individuals, Families, Groups, Communities or Institutions in Diverse Health Contexts of

Generic (Folk) Care
Nursing Care Practices
Professional Care–Cure Practices

Transcultural Care Decisions & Actions

Culture Care Preservation/Maintenance
Culture Care Accommodation/Negotiation
Culture Care Repatterning/Restructuring

Culturally Congruent Care for Health, Well-being or Dying

Code: ↔ (Influencers)

© M. Leininger 2004
APPENDIX C:

ACCULTURATION HEALTH CARE ASSESSMENT
The semi-structured format includes questions to elicit data specific to the domain of inquiry for this study. The questions relate to the key informant’s culture care meanings, expressions, and patterns prior to and after falling in the hospital setting.

1. I would like to know about the circumstances of your fall.
   a) When and where did your fall occur?
   b) What were the circumstances of the fall?
   c) Could your fall have been prevented?

2. General Nursing Care factors:
   a) What is the meaning of ‘care’ for you?
   b) What link do you see between good nursing care and regaining your health?
   c) What do you see as the link between ‘good nursing care’ and falls?

3. Care Beliefs and Practices:
   a) What do health, wellness, and illness mean to you?
   b) In what ways have your current hospital experiences helped or not helped?
   c) What nursing care practices do you believe have been the most helpful addressing fall risk?

4. Language and Communication: Communicating with and understanding patients are important to meet care needs.
   a) How would you like to communicate your needs to nurses?
   b) In what ways would you like nurses to communicate with you?
   c) Have you experienced any miscommunications?

5. Technology: Dependence in your daily life upon high tech appliances.
   a) In what ways do you think technology helps or hinders keeping you well?
   b) What, if any, technology was used to address fall risk?
   c) Can you share with me your views on technology to address fall risk?

6. Educational factors: I would like to hear and understand in what ways you believe education contributes to your health or illness.
   a) Has your educational background influenced your health or illness?
   b) Do you value education and health instruction?
   c) What, if any, education or instruction did you receive about fall risk?

7. Cultural values and beliefs: In providing nursing care, your cultural values, beliefs and life ways are important for nurses to understand.
   a) Could you share with me your values and beliefs you would like nurses to know to help you gain or maintain your health?
b) Could you share with me your values and beliefs you would like nurses to know regarding fall risk?
c) Could you give me examples of ‘good caring’?

8. Ethno History: In nursing, we can benefit from learning about the patient’s cultural heritage.
a) Could you tell me something about your cultural background?
b) Where were you born?
c) How would you like to be referred to by friends or strangers?

9. Kinship: I would like to hear about your family and close friends and what they mean to you.
a) How have your family or close friends influenced your life especially your health?
b) In what ways would you like your family or friends to care for you?
c) How would you like the nurses to care for you?

10. Religious/spiritual/philosophical factors: When people become ill or anticipate problems, they often use prayer or religious or spiritual beliefs.
a) How do you think your religious/spiritual/philosophical beliefs and practices help you care for yourself?
b) What religious/spiritual/philosophical factors should we incorporate into your care?

APPENDIX D:

OBSERVATION-PARTICIPATION-REFLECTION ENABLER
Using the Observation-Participation-Reflection Enabler (Leininger & McFarland, 2006) facilitated entrance into the hospital culture. Observations were recorded in a field journal without personal identifiers. Data included the following: contextual issues such as the totality of the physical surroundings including design characteristics, equipment and technology, use of fall risk assessment scales or other prevention protocols, and sociocultural factors such as interactions with and between general informants.*

<table>
<thead>
<tr>
<th>Phases</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus</td>
<td>Primarily Observation and Active Listening (no active participation)</td>
<td>Primarily Observation with Limited Participation</td>
<td>Primarily Participation with Continued Observations</td>
<td>Primarily Reflection and Confirmation of Findings from the data</td>
</tr>
</tbody>
</table>

APPENDIX E:

ETHNONURSING DATA ANALYSIS PHASES
### Fourth Phase

**Major Themes, Research Findings, Theoretical Formulations, and Recommendations**

This is the highest phase of data analysis, synthesis, and interpretation. It requires synthesis of thinking, configurations, analysis, interpreting findings, and creative formulations from data of the previous phases. The researcher’s task is to abstract and present major themes, research findings, recommendations, and theoretical formulations.

### Third Phase

**Pattern and Contextual Analysis**

Data are scrutinized to discover saturated ideas and recurrent patterns of similar or different meanings, expressions, structural forms, interpretations, or explanations of data related to the domain of inquiry. Data are examined to show patterning with respect to meanings in-context and along with further credibility and confirmation of findings.

### Second Phase

**Identification and Categorization of Descriptors and Components**

Data are coded and classified as related to the domain of inquiry and sometimes the questions. Emic and etic descriptors are studied within context for similarities and differences. Recurrent components are studied for their meanings.

### First Phase

**Collecting, Describing, and Documenting Raw Data (Field Journal or Computer)**

Researcher collects, describes, records, and begins to collect data related to the purposes, domains of inquiry, or questions under study. This phase includes: recording interview data from key and general informants; making observations and having participatory experiences; identifying contextual meanings; making preliminary interpretations; identifying symbols and recording data related to the phenomena under study from an emic focus, but attentive to etic data. Data from the condensed and full field journal is processed directly into the computer, coded by hand.

Table 1. NSQO data from 196 CalNOC hospitals.*

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>10%</th>
<th>25%</th>
<th>50%</th>
<th>75%</th>
<th>90%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All unit types combined</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAPU Stage 2+</td>
<td>3.84</td>
<td>2.2</td>
<td>1.41</td>
<td>2.48</td>
<td>3.62</td>
<td>5.04</td>
<td>6.02</td>
</tr>
<tr>
<td>Falls per 1,000 patient-days</td>
<td>2.94</td>
<td>0.9</td>
<td>1.90</td>
<td>2.32</td>
<td>2.87</td>
<td>3.33</td>
<td>4.19</td>
</tr>
<tr>
<td>Injury Falls per 1,000 patient-days</td>
<td>0.10</td>
<td>0.2</td>
<td>0.01</td>
<td>0.04</td>
<td>0.07</td>
<td>0.12</td>
<td>0.19</td>
</tr>
<tr>
<td><strong>Medical surgical units</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAPU Stage 2+</td>
<td>3.16</td>
<td>2.2</td>
<td>0.81</td>
<td>1.87</td>
<td>2.87</td>
<td>4.13</td>
<td>5.30</td>
</tr>
<tr>
<td>Falls per 1,000 patient-days</td>
<td>3.28</td>
<td>1.06</td>
<td>2.12</td>
<td>2.52</td>
<td>3.20</td>
<td>3.87</td>
<td>4.82</td>
</tr>
<tr>
<td>Injury Falls per 1,000 patient-days</td>
<td>0.12</td>
<td>0.18</td>
<td>0.00</td>
<td>0.04</td>
<td>0.08</td>
<td>0.14</td>
<td>0.23</td>
</tr>
<tr>
<td><strong>Step-down units</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAPU Stage 2+</td>
<td>4.30</td>
<td>3.4</td>
<td>0.0</td>
<td>1.98</td>
<td>3.95</td>
<td>5.73</td>
<td>7.89</td>
</tr>
<tr>
<td>Falls per 1,000 patient-days</td>
<td>2.98</td>
<td>1.22</td>
<td>1.43</td>
<td>2.24</td>
<td>2.80</td>
<td>3.78</td>
<td>4.57</td>
</tr>
<tr>
<td>Injury Falls per 1,000 patient-days</td>
<td>0.11</td>
<td>0.20</td>
<td>0.00</td>
<td>0.01</td>
<td>0.02</td>
<td>0.16</td>
<td>0.32</td>
</tr>
<tr>
<td><strong>Critical care units</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAPU Stage 2+</td>
<td>7.79</td>
<td>6.7</td>
<td>1.9</td>
<td>3.92</td>
<td>7.11</td>
<td>10.17</td>
<td>13.89</td>
</tr>
<tr>
<td>Falls per 1,000 patient-days</td>
<td>1.06</td>
<td>1.25</td>
<td>0.06</td>
<td>0.5</td>
<td>0.8</td>
<td>1.27</td>
<td>2.22</td>
</tr>
<tr>
<td>Injury Falls per 1,000 patient-days</td>
<td>0.03</td>
<td>0.1</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.10</td>
</tr>
</tbody>
</table>

* (Brown et al., 2010)
Table 2. Data trends of inpatient fall rates from 196 CalNOC hospitals.*

* (Brown et al., 2010)
Table 3. Eight multisite nurse staffing studies associated with fall rates.*

<table>
<thead>
<tr>
<th>Source</th>
<th>Design/Time frame</th>
<th>Setting/Population</th>
<th>Variables</th>
<th>Outcomes</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blegen &amp; Vaughn (1998)</td>
<td>Retrospective</td>
<td>39 hospital units</td>
<td>RN hours per patient day</td>
<td>Fall rates, MAE,</td>
<td>Units with higher RN hours had lower fall rates.</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td>in 11 U.S. hospitals</td>
<td></td>
<td>Cardiac Arrests</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1993-1995</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sovie &amp; Jawad (2001)</td>
<td>Prospective</td>
<td>58 hospital units</td>
<td>RN hours per patient day</td>
<td>Fall rates, UTI, HAPU</td>
<td>Units with higher RN hours had lower fall rates.</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td>in 29 U.S. hospitals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1997-1998</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whitman et al. (2002)</td>
<td>Prospective</td>
<td>95 hospital units</td>
<td>Total hours per patient day</td>
<td>Fall rates, MAE, HAPU,</td>
<td>Units with higher total hours had lower fall rates.</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td>in 10 U.S. hospitals</td>
<td></td>
<td>Restraint Use, CLI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jan-Dec 1999</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dunton et al. (2004)</td>
<td>Retrospective</td>
<td>1836 hospital units</td>
<td>RN hours per patient day</td>
<td>Fall rates, fall related</td>
<td>Units with higher RN hours had lower fall rates.</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td>in 282 U.S. hospitals</td>
<td></td>
<td>injury rates</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oct-Dec 2002</td>
<td></td>
<td>Total hours per patient day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donaldson et al. (2005)</td>
<td>Retrospective</td>
<td>268 hospital units</td>
<td>RN hours per patient day</td>
<td>Fall rates, HAPU</td>
<td>Relationship not statistically significant.</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td>in 68 U.S. hospitals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2002-2004</td>
<td></td>
<td>Total hours per patient day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake &amp; Cheung (2006)</td>
<td>Systematic Review</td>
<td>Inclusion criteria of</td>
<td>RN hours per patient day</td>
<td>Fall rates, HAPU</td>
<td>Inconclusive based on differences in research methods.</td>
</tr>
<tr>
<td></td>
<td>Cross sectional</td>
<td>multivariate analysis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>studies</td>
<td>yielded 8 studies</td>
<td>Total hours per patient day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bolton et al. (2007)</td>
<td>Retrospective</td>
<td>252 hospital units</td>
<td>RN hours per patient day</td>
<td>Fall rates, HAPU</td>
<td>Relationship not statistically significant.</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td>in 108 U.S. hospitals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2002-2006</td>
<td></td>
<td>Total hours per patient day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHRQ (2007)</td>
<td>Meta-Analysis:</td>
<td>Inclusion criteria of</td>
<td>RN hours per patient day</td>
<td>Fall rates, HAPU,</td>
<td>Units with higher total hours had lower rates for all outcomes.</td>
</tr>
<tr>
<td></td>
<td>tested association</td>
<td>multivariate analysis</td>
<td></td>
<td>mortality, sepsis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>between nurse</td>
<td>yielded 94 studies</td>
<td>Total hours per patient day</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>staffing and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>patient outcomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1990-2006</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Results reported are equivocal, listed chronologically. MAE = medication administration error; HAPU = hospital acquired pressure ulcer; CLI = central line infection.
<table>
<thead>
<tr>
<th>Scale</th>
<th>Author</th>
<th>Validity</th>
<th>Reliability</th>
<th>Responsiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hendrich I</td>
<td>Heinze et al.</td>
<td>Construct</td>
<td>Cronbach’s alpha</td>
<td>Sensitivity = 75%</td>
</tr>
<tr>
<td>(1995)</td>
<td>(2006,2008)</td>
<td>Eigen value = 1.8</td>
<td>α = 0.54</td>
<td>Specificity = 47%</td>
</tr>
<tr>
<td></td>
<td>Perell et al.</td>
<td></td>
<td>Inter-rater</td>
<td>Sensitivity = 77%</td>
</tr>
<tr>
<td></td>
<td>(2001)</td>
<td></td>
<td>κ = 0.97</td>
<td>Specificity = 72%</td>
</tr>
<tr>
<td>Hendrich II</td>
<td>Kim et al.</td>
<td>Inter-rater</td>
<td></td>
<td>Sensitivity = 70%</td>
</tr>
<tr>
<td>(2003)</td>
<td>(2007)</td>
<td>κ = 0.87</td>
<td></td>
<td>Specificity = 61%</td>
</tr>
<tr>
<td></td>
<td>Lovallo et al.</td>
<td></td>
<td></td>
<td>Sensitivity = 46%</td>
</tr>
<tr>
<td></td>
<td>(2010)</td>
<td></td>
<td></td>
<td>Specificity = 71%</td>
</tr>
<tr>
<td>Morse</td>
<td>Chow et al.</td>
<td>Construct</td>
<td>Cronbach’s alpha</td>
<td>Sensitivity = 31%</td>
</tr>
<tr>
<td></td>
<td>Kim et al.</td>
<td>Inter-rater</td>
<td></td>
<td>Sensitivity = 88%</td>
</tr>
<tr>
<td></td>
<td>(2007)</td>
<td>κ = 0.86</td>
<td></td>
<td>Specificity = 48%</td>
</tr>
<tr>
<td>STRATIFY</td>
<td>Schwendimann et al.</td>
<td>Inter-rater</td>
<td></td>
<td>Sensitivity = 80%</td>
</tr>
<tr>
<td></td>
<td>Harrington et al.</td>
<td></td>
<td></td>
<td>Sensitivity = 74%</td>
</tr>
<tr>
<td></td>
<td>(2010)</td>
<td></td>
<td></td>
<td>Specificity = 59%</td>
</tr>
<tr>
<td></td>
<td>Kim et al.</td>
<td>Inter-rater</td>
<td></td>
<td>Sensitivity = 55%</td>
</tr>
<tr>
<td></td>
<td>(2007)</td>
<td>κ = 0.88</td>
<td></td>
<td>Specificity = 75%</td>
</tr>
<tr>
<td></td>
<td>Milisen et al.</td>
<td></td>
<td></td>
<td>Sensitivity = 70%</td>
</tr>
<tr>
<td></td>
<td>(2007)</td>
<td></td>
<td></td>
<td>Specificity = 59%</td>
</tr>
<tr>
<td></td>
<td>Oliver et al.</td>
<td></td>
<td></td>
<td>Sensitivity = 67%</td>
</tr>
<tr>
<td></td>
<td>(2008)</td>
<td></td>
<td></td>
<td>Specificity = 51%</td>
</tr>
<tr>
<td></td>
<td>Papaioannou et al.</td>
<td>Inter-rater</td>
<td></td>
<td>Sensitivity = 91%</td>
</tr>
<tr>
<td></td>
<td>(2004)</td>
<td>κ = 0.78</td>
<td></td>
<td>Specificity = 60%</td>
</tr>
</tbody>
</table>

* (Ten studies on the three most common scales reviewed, wide ranging psychometric data reported).
Table 5. Prevention Studies.*

<table>
<thead>
<tr>
<th>Source</th>
<th>Design Type</th>
<th>Design/Outcome</th>
<th>Setting/Population</th>
<th>Intervention</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tideiksaar et al.</td>
<td>RCT</td>
<td>RCT/Fall rates</td>
<td>Acute care/70 geriatric patients</td>
<td>Bed alarms</td>
<td>Slight rate reduction</td>
</tr>
<tr>
<td>(1993)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vassallo et al.</td>
<td>Non-RCT</td>
<td>Quasi-experiment/fall and injury rates</td>
<td>Acute care/825 geriatric patients</td>
<td>Medication review and wristbands</td>
<td>Slight rate reduction</td>
</tr>
<tr>
<td>(2005)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kwok et al.</td>
<td>RCT</td>
<td>RCT/Fall rates and restraint use</td>
<td>Acute care/180 geriatric patients</td>
<td>Bed alarms</td>
<td>No reduction: fall rate or restraint use</td>
</tr>
<tr>
<td>(2006)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schwendimann et al.</td>
<td>Non-experimental</td>
<td>Survey/Fall and injury rates</td>
<td>Acute care/geriatric patients</td>
<td>Fall prevention program</td>
<td>No rate reduction</td>
</tr>
<tr>
<td>(2006)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oliver et al.</td>
<td>Meta-analysis: RCT studies</td>
<td>Systematic Review/Fall and injury rates</td>
<td>Acute care</td>
<td>Multiple interventions-23 studies</td>
<td>Slight rate reduction</td>
</tr>
<tr>
<td>(2000, 2007)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cummings et al.</td>
<td>RCT</td>
<td>RCT/Fall rates</td>
<td>Acute care/3999 Medical patients</td>
<td>Medication review, bed alarms and staff education</td>
<td>No rate reduction</td>
</tr>
<tr>
<td>(2008)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Krauss et al.</td>
<td>Non-RCT</td>
<td>Quasi-experiment/fall rates</td>
<td>Acute care/Medical units</td>
<td>Fall prevention program</td>
<td>Rate reduction not sustained</td>
</tr>
<tr>
<td>(2008)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barker et al.</td>
<td>Pre-post test</td>
<td>Pre-post/Fall and injury rates</td>
<td>Acute care</td>
<td>Fall prevention program</td>
<td>No rate reduction</td>
</tr>
<tr>
<td>(2009)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coussement et al.</td>
<td>Meta-analysis: RCT studies</td>
<td>Systematic Review/Fall rates</td>
<td>Acute care</td>
<td>Multiple interventions-8 studies</td>
<td>No rate reduction</td>
</tr>
<tr>
<td>(2008)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Koh et al.</td>
<td>RCT</td>
<td>RCT/Fall rates</td>
<td>Acute care</td>
<td>Fall prevention program</td>
<td>No rate reduction</td>
</tr>
<tr>
<td>(2009)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cameron et al.</td>
<td>Meta-analysis: RCT studies</td>
<td>Systematic Review/Fall rates</td>
<td>Acute care</td>
<td>Multiple interventions-41 studies</td>
<td>Slight rate reduction</td>
</tr>
<tr>
<td>(2010)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*(Results reported are equivocal, listed chronologically).*
Table 6. Translation science studies.*

<table>
<thead>
<tr>
<th>Source</th>
<th>Design/Time frame</th>
<th>Setting/Population</th>
<th>Themes/Interventions</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brewer (2006)</td>
<td>Descriptive</td>
<td>Four U.S. hospitals and hospital staff (RN, MD, PT, Techs)</td>
<td>TIM (trans theoretical integration model)</td>
<td>No change in fall rates.</td>
</tr>
<tr>
<td>AHRQ (2008)</td>
<td>Retrospective</td>
<td>33 U.S. hospitals</td>
<td>TRIP (translating research into practice)</td>
<td>No change in fall and injury rates.</td>
</tr>
<tr>
<td>Hughes et al. (2008)</td>
<td>Mixed: Qualitative and Descriptive</td>
<td>3202 Elders living in Australia</td>
<td>Fall prevention education</td>
<td>Fall prevention programs not relevant.</td>
</tr>
<tr>
<td>Rush et al. (2008)</td>
<td>Qualitative</td>
<td>U.S. hospital Staff (RN, PT and Techs)</td>
<td>Identification of barriers or effective practices in fall prevention</td>
<td>Staff identified ‘communication’ and ‘assessment’ as effective practices.</td>
</tr>
<tr>
<td>Dykes et al. (2009)</td>
<td>Qualitative</td>
<td>U.S. hospital Staff (RN and NA)</td>
<td>Identification of barriers or effective practices in fall prevention</td>
<td>Staff identified ‘communication’ and ‘assessment’ as effective practices.</td>
</tr>
<tr>
<td>Mackenzie (2009)</td>
<td>Qualitative</td>
<td>U.K. hospital staff (RN, PT and Techs)</td>
<td>Identification of barriers or effective practices in fall prevention</td>
<td>Staff identified ‘clinical reasoning’ and ‘access to resources’ as effective practices.</td>
</tr>
<tr>
<td>Tzeng &amp; Yin (2009)</td>
<td>Qualitative</td>
<td>Discharged patients from one U.S. hospital</td>
<td>Fall prevention education</td>
<td>Fall prevention programs minimally effective.</td>
</tr>
</tbody>
</table>

*(Results reported are equivocal, listed chronologically).*
APPENDIX G:

TABLES OF RESULTS (TABLES 7-10)
Table 7. Key informant demographics.

<table>
<thead>
<tr>
<th>Inpatient</th>
<th>Age</th>
<th>Gender</th>
<th>Ethnicity &amp; Education</th>
<th>Medical Diagnosis</th>
<th>Risk</th>
<th>Time of fall</th>
<th>Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>K 1</td>
<td>66</td>
<td>M</td>
<td>Midwestern White, College degree</td>
<td>Abdominal pain, NASH</td>
<td>Moderate</td>
<td>0645 am</td>
<td>R hand &amp; arm bruising</td>
</tr>
<tr>
<td>K 2</td>
<td>61</td>
<td>M</td>
<td>Appalachian White, High School</td>
<td>R leg burn &amp; skin graft</td>
<td>Moderate</td>
<td>4pm</td>
<td>None</td>
</tr>
<tr>
<td>K 3</td>
<td>32</td>
<td>F</td>
<td>Midwestern White, some College</td>
<td>Acute liver failure</td>
<td>Low</td>
<td>4pm</td>
<td>None</td>
</tr>
<tr>
<td>K 4</td>
<td>71</td>
<td>M</td>
<td>Midwestern White, College degree</td>
<td>CRF, HTN, NIDDM</td>
<td>High</td>
<td>0400 am</td>
<td>None</td>
</tr>
<tr>
<td>K 5</td>
<td>64</td>
<td>F</td>
<td>Midwestern White, some college</td>
<td>CAD, CABG</td>
<td>Moderate</td>
<td>1030 am</td>
<td>None</td>
</tr>
<tr>
<td>K 6</td>
<td>43</td>
<td>F</td>
<td>Midwestern White, some college</td>
<td>COPD, MS, Melanoma</td>
<td>Low</td>
<td>0630 am</td>
<td>L Thigh Bruise</td>
</tr>
<tr>
<td>K 7</td>
<td>30</td>
<td>F</td>
<td>Southern White, College degree</td>
<td>IBS, Crohn’s, Colon resection</td>
<td>Low</td>
<td>0600 am</td>
<td>None</td>
</tr>
<tr>
<td>K 8</td>
<td>86</td>
<td>F</td>
<td>Midwestern White, High School</td>
<td>CAD, CABG</td>
<td>Moderate</td>
<td>7pm</td>
<td>Scalp laceration</td>
</tr>
</tbody>
</table>
Table 8. General informant demographics.

<table>
<thead>
<tr>
<th>Registered Nurse</th>
<th>Age</th>
<th>Gender</th>
<th>Level of Education</th>
<th>Years of Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>G 1a</td>
<td>38</td>
<td>F</td>
<td>BSN</td>
<td>&lt; 1 year</td>
</tr>
<tr>
<td>G 1b</td>
<td>31</td>
<td>F</td>
<td>MSN</td>
<td>&lt; 1 year</td>
</tr>
<tr>
<td>G 2a</td>
<td>30</td>
<td>F</td>
<td>MSN</td>
<td>4 years</td>
</tr>
<tr>
<td>G 2b</td>
<td>58</td>
<td>F</td>
<td>Diploma</td>
<td>35 years</td>
</tr>
<tr>
<td>G 3a</td>
<td>31</td>
<td>F</td>
<td>BSN</td>
<td>7 years</td>
</tr>
<tr>
<td>G 3b</td>
<td>33</td>
<td>F</td>
<td>BSN</td>
<td>9 years</td>
</tr>
<tr>
<td>G 4a</td>
<td>22</td>
<td>M</td>
<td>BSN</td>
<td>&lt; 1 year</td>
</tr>
<tr>
<td>G 4b</td>
<td>40</td>
<td>F</td>
<td>BSN</td>
<td>16 years</td>
</tr>
<tr>
<td>G 5a</td>
<td>30</td>
<td>F</td>
<td>BSN</td>
<td>5 years</td>
</tr>
<tr>
<td>G 5b</td>
<td>54</td>
<td>F</td>
<td>MSN</td>
<td>28 years</td>
</tr>
<tr>
<td>G 6a</td>
<td>51</td>
<td>F</td>
<td>MSN</td>
<td>30 years</td>
</tr>
<tr>
<td>G 6b</td>
<td>30</td>
<td>F</td>
<td>BSN</td>
<td>6 years</td>
</tr>
<tr>
<td>G 7a</td>
<td>26</td>
<td>F</td>
<td>BSN</td>
<td>4 years</td>
</tr>
<tr>
<td>G 7b</td>
<td>26</td>
<td>F</td>
<td>BSN</td>
<td>&lt; 1 year</td>
</tr>
<tr>
<td>G 8a</td>
<td>30</td>
<td>M</td>
<td>BSN</td>
<td>&lt; 1 year</td>
</tr>
<tr>
<td>G 8b</td>
<td>27</td>
<td>F</td>
<td>BSN</td>
<td>4 years</td>
</tr>
</tbody>
</table>
Table 9. Findings of the culture care themes.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Findings</th>
<th>Social Structure Influences</th>
<th>Nursing Care Modalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Culture Care Theme I</td>
<td>1a: Adults experiencing a fall while hospitalized included blaming, motivated by self care, and the ‘autopilot’ pattern.</td>
<td>Cultural lifeways and philosophical factors</td>
<td>Culture Care preservation/maintenance</td>
</tr>
<tr>
<td></td>
<td>1b: Adults experiencing a fall while hospitalized involved vulnerability during illness, and the ‘caged animal’ pattern.</td>
<td>Health and illness and kinship/social factors</td>
<td></td>
</tr>
<tr>
<td>Universal Culture Care Theme II</td>
<td>2a: Adults experiencing a fall while hospitalized involved mitigating risk with use of the organization’s fall risk assessment scale, and the ‘lost in translation’ pattern.</td>
<td>Educational factors</td>
<td>Culture Care accommodation/negotiation</td>
</tr>
<tr>
<td></td>
<td>2b: Adults experiencing a fall while hospitalized involved mitigating risk within the physical environment and the ‘lay of the land’ pattern.</td>
<td>Environmental and technological factors</td>
<td>Culture Care repatterning/restructuring</td>
</tr>
<tr>
<td>Diverse Culture Care Theme</td>
<td>Adults experiencing a fall while hospitalized meant experiencing diversity in the efficacy of staffing patterns, and ‘turbulence’ patterns.</td>
<td>Economic, kinship/social, and political/legal factors</td>
<td>Culture Care repatterning/restructuring</td>
</tr>
</tbody>
</table>
Table 10. Implications of the culture care themes.

<table>
<thead>
<tr>
<th>Nursing Care Modality</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture Care preservation/maintenance for self care despite vulnerability due to illness.</td>
<td>Support patient expressions for self care of which inpatient falls may be viewed as an unintended consequence. Systems level approach (pharmacy, environmental services, etc.) to support patient expressions for self care, minimizing individual level focus. Course curriculums integrating the QSEN program (Cronewett et al., 2007).</td>
</tr>
<tr>
<td>Culture Care accommodation/negotiation and the ‘translation of fall risk’.</td>
<td>Explanations and conversations about fall risk assessment processes and scale results with patients. Implementation of hospital wide programs: patient/family participation as members of the organization’s inpatient falls committee and communication training with simulation. Course curriculums and training on business acumen and patient/family communication strategies and techniques (age related, language, etc.).</td>
</tr>
<tr>
<td>Culture Care repatterning/restructuring and the remodeling of the ‘lay of the land’.</td>
<td>Participation in new construction and renovation design projects as well as membership of professional organizations such as the Nursing Institute for Healthcare Design (2012). Develop clinical liaison roles within planning and design teams including compensated time off from direct care nurse responsibilities. Professional membership within the Facility Guidelines Institute (FGI). EBD course offerings: concepts and application. Inter-professional programs (architects, nurses, finance) for knowledge and skill integration across disciplines.</td>
</tr>
</tbody>
</table>
REFERENCES


VITA

The author, Laura M. Rogers, became a registered nurse later in life. This was a direct result of the nursing care she and her family received, during the high risk pregnancy, birth and death of her first born, Alex. The exceptional nursing care that helped her and her family to survive this traumatic experience made a lasting impression. Because of the kindness, authenticity, and heroism these nurses conveyed, becoming a nurse was undoubtedly the best way to pay it forward and serve others during their healthcare experiences.

As Salutatorian, Ms. Rogers graduated with a nursing diploma from Ravenswood Hospital, school of nursing in 1988. The next several years were spent in hospital practice and management. In 2005, Ms. Rogers obtained a Master’s degree in Nursing as well as board certification through the American Nurse’s Credentialing Center in nursing administration, advanced. Her background includes hospital leadership roles such as Magnet Program Director and Quality/Safety Improvement Specialist. The genesis of this study developed during her tenure within these roles. Ms. Rogers is a member of the profession’s Honor Society of Nursing, Sigma Theta Tau International, as well as the American Nurses Association. Currently, she teaches at her alma mater, Loyola University Chicago, in the undergraduate nursing program.