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Quality of Life, Environmental Domain, and Use of Identification Devices in Nursing

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QUALITY OF LIFE, ENVIRONMENTAL DOMAIN, AND USE OF

IDENTIFICATION DEVICES IN

NURSING HOMES

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Partial Fulfillment of the Requirements for

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QUALITY OF LIFE, ENVIRONMENTAL DOMAIN, AND USE OF
IDENTIFICATION DEVICES IN

NURSING HOMES

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Fort Hays State University, 2009

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ABSTRACT

Significant attention has been brought to the safety of medical and nursing care in acute-care hospitals, but nursing homes are not immune to errors that result in injury (Kapp, 2003). Errors, even minor ones, can have significant impact in this population group of aged, frail individuals (Scott-Cawiezell, et al., 2006). Nursing home residents do not wear an identification device for varied reasons. This places an extra burden on those passing medications to ensure they have the right person receiving the right medication.

The purpose of this study was to determine the relationships between variables with the resident's willingness to wear an identification device. The variables selected were: (a) the resident's quality of life, (b) the resident's perception of his/her environmental domain, and (c) the resident's willingness to wear an identification device.

A non-experimental, correlational design was used. Inferential statistics using Spearman's *rho* was used to determine correlations between the variables. Chi-square was used to determine differences between male and female responses. A convenience sample ($N = 53$) included residents from seven nursing homes in two Midwestern states.

Research question number one was, "What is the relationship, if any, between a nursing home resident's quality of life and his/her willingness to wear an identification device?" There was an insignificant, inverse correlation and the result was not significant, $r_s(51) = -.058, p > .05$.

Research question number two was, "What is the relationship, if any, between a nursing home resident's perception of the environmental domain and his/her willingness to wear an identification device?" An insignificant correlation was found and the result was not significant, $r_s(51) = .165, p > .05$.

The third research question was, "What are the differences, if any, between gender of nursing home residents and their willingness to wear an identification device?" No significant difference was found between the variables, $X^2(1) = .331, p > .05$.

This investigation found no significant correlation between nursing home residents' perceptions of quality of life and environment and willingness to wear and identification device, nor were there significant differences between male and female participants.

ACKNOWLEDGEMENTS

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CHAPTER I – INTRODUCTION

The population of the United States (U.S.) is aging. This population trend will continue through the next two to three decades, which will result in a growth in the numbers of older Americans, and a three-fold increase in the number of individuals needing nursing home care in the next ten years (Scott-Cawiezell & Vogelsmeier, 2006). Comden et al. (2005) found that 4.5 percent (1.56 million seniors) age 65 or older were living in nursing homes in 2000. Those persons over age 85 years increased to 18.2%. The likelihood for nursing home placement of individuals over age 65 years is close to 43% (Handler et al., 2006). This population represents a vulnerable, high-risk group due to cognitive and sensory impairments (Bonner, Castle, Perera, & Handler, 2008). As the American population ages, the nursing home industry will be challenged to deliver safe and competent care in an environment where today's many nursing home practices are considered basic and routine.

Nursing homes in America provide housing, meals, therapy, activities, and nursing care for individuals who can no longer effectively provide or obtain these services in their own homes. The residents of nursing homes depend on staff to provide safe, appropriate, and effective care to maintain a level of functioning, and to provide a quality of life that meets the needs of each individual. Public concerns in the 1970s and 1980s led the Institute of Medicine (IOM) to issue its report, *Improving the Quality of Care in Nursing Homes* to Congress in 1986 (IOM, 2001). This report brought about Federal regulations for nursing homes through the passage of the Nursing Home Reform

Act known as the Omnibus Budget Reconciliation Act (OBRA) of 1987 (Fries, 2008).

The act shifted government focus from structure and process issues to resident outcomes,

quality indicators, consumer protections to ensure resident rights, and access to clinical

interventions and quality living environments (Stone, Dawson, & Harahan, 2003). The

OBRA requirements for nursing facilities and resident rights are delineated in the US

Code, Title 42, Chapter 7 Subchapter XIX, § 1396r. The nursing home must protect and

promote resident rights, which include: free choice, freedom from restraint, privacy, and

confidentiality, among others. The goal of the requirements is to promote the

maintenance or enhancement of the quality of life of each resident (Cornell University

Law School, 2008).

Despite the sweeping changes implemented in the nursing home industry in the

two decades following implementation of OBRA 1987, there continue to be concerns

about quality of care, resident safety, and quality of life for residents in long-term care

facilities. Hughes and Lapane (2006) found there are still concerns related to negative

events such as medication errors and adverse drug reactions. Medical errors within the

U.S. healthcare system have captured much attention in acute-care hospitals, but nursing

homes are not immune to errors. Due to the fragile and vulnerable nature of nursing

home residents, medical errors should demand more attention and study.

As a result of OBRA 1987 enforcement, nursing homes are more likely to view

medical errors in a culture of blame and to have a punitive response which deters

reporting (Handler et al., 2006). The creation of a patient safety culture within the nursing

home setting requires a different approach. This investigation will examine how the

variables of a resident's perception of his/her quality of life and his/her perception of the

environmental domain may relate to whether or not the resident would choose to wear or use an identification device as a enhanced safety feature.

Statement of the Problem

Significant attention has been drawn to the number of medical errors occurring in the United States. Attention has focused on acute-care hospitals, but nursing homes must be included if one is to look at medical errors occurring in the U.S. A study by Barker, Flynn, Pepper, Bates, and Mikeal (2002) found that the distribution of error was similar between hospitals and nursing homes, and the mean error rate in the 36 facilities studied was 19%. When wrong time medication errors were removed, the error rate for all facilities was ten percent. Rothschild, Bates, and Leape (2000) also found adverse drug events were common in nursing homes with as many as 32% of residents having had at least one medication error.

Because nursing homes provide care to the most frail and vulnerable individuals, errors can have significant negative results in this population group (Scott-Cawiezell, et al., 2006). Pelletier (2001) found in a study of nursing homes that most medication errors occurred due to knowledge and performance deficits. A study of 18 Massachusetts nursing homes found 546 adverse drug events. Fifty-one percent of those were deemed to have been preventable (Edwards, 2001). Scott-Cawiezell and Vogelsmeier (2006) stated that error prevention is marginalized as part of most nursing home quality improvement programs.

The nursing home resident population is at risk due to a complex set of issues. Among these issues are the numerous medications prescribed for an increased number of medical conditions, the risk of drug interactions related to polypharmacy, metabolism

changes related to aging, and the number of physicians prescribing medications for the elderly resident (Cameron & McConnell, 2004; Field et al., 2001; Pitkala, Strandberg, & Tilvis, 2002). Hughes and Lapane (2006) found that 92% of nursing homes do not have sufficient staff to provide care that meets regulatory and practice guidelines. Turnover rates for Licensed Practical Nurses (LPNs) and for Certified Nursing Assistants (CNAs) were found to be 85% for the first year. This instability of nursing personnel correlates with decreased quality of care. The model of nursing care used by nursing homes relies on the majority of direct care being delivered by CNAs guided by LPNs and or Registered Nurses (RNs). Physicians are rarely physically present. This care model contributes to resident safety issues such as medication orders. Safety concerns are frequently communicated via telephone to the physician, rather than having the physician at the bedside (Bonner et al., 2008).

Medication administration in nursing homes is performed by certified medication aides (CMAs), LPNs, and RNs. The least trained of these individuals are the ones most likely to pass medications in nursing homes (Scott-Cawiezell et al., 2006). Medication passes are viewed as a routine and basic task in long-term care, rather than the complex and critical function it is. The nurse ensuring right patient is one of the medication administration rights, but nursing home residents do not wear the typical identification bracelet associated with nursing care in a hospital setting. Verifying identification is one of the fundamental steps used by nurses to validate the correct patient. This safety measure is not present in nursing homes and may contribute to errors in medication administration.

The nursing home is to be a home-like environment. Autonomy, participation in decision making, and dignity are considered to be the most important attributes of quality of life for nursing home residents (Hughes & Lapane, 2006). Creating this home-like environment should not preclude the establishment of a safety culture within the nursing home. Residents are frequently not in their room at the time of medications passes, which makes resident identification more difficult. Residents are frequently hard of hearing and may respond to name or identification questions inappropriately, others are confused, some are non-verbal, and others may not be able to respond at all, leading to mistaken identity and medical error.

Purpose of the Investigation

The purpose of this investigation is to determine whether the resident's perception of quality of life and perception of their environmental domain would affect whether the resident would chose to wear or not to wear an identification device. Quality of life and environmental domain issues may impact the nursing home resident's decision to wear an identification device. The resident's perception of their safety may also play a role in the decision to wear an identification device or not. A resident, who considers the environment safe, may opt not to wear a device. If the environment is perceived as unsafe, the resident may choose to wear an identification device to ensure his/her safety at the expense of quality of life concerns. Male nursing home residents may have different perceptions than female residents related to quality of life and to environmental domains. This investigation will determine if there is a relationship between these variables.

Significance of the Investigation

Unlike the acute care setting, nursing homes lag behind in establishing a safety culture environment with an emphasis on error prevention. The number of errors occurring in the health care industry has significant impact on the individual resident, on the nursing personnel making the error, and on the reputation of the facility involved. The IOM 1999 report, *To Err is Human: Building a Safer Health System*, found that 44,000 to 98,000 people die in U.S. hospitals as a result of medical errors (IOM, 1999). If hospitals and nursing homes have comparable error rates, the projected error rate doubles when nursing home residents are added to the equation. The IOM (July 2006) reported 800,000 preventable Adverse Drug Events (ADE) occurred each year in nursing homes. The cost for one ADE in an acute care setting was found to be $8,750 in 2006. Medicare enrollees aged 65 years and up had expenses of $887 million for treating medication errors. Nursing home residents are especially vulnerable to the effects of medications, and errors could have life threatening consequences. Any error or adverse drug effect could have potential to cause discomfort or jeopardize the individual's health.

Nursing staff are also impacted by the realization that an error was made. Reporting of errors is essential for appropriate response and for performance improvement programs. Blegen et al. (2004) reported that errors are under reported and that only 10 – 25% of actual errors are reported. In the study by Blegen, nurses indicated fear of being blamed and of peers thinking they were incompetent. Other fears voiced included the fear of reprimands, actions against their license, and exposure to the media as some of the reasons for not reporting. Guilt and negative feelings are common following a medication error. Burnout has also been shown to affect error reporting. A

nurse may be too busy to perform adequate checks or to initiate an error report. Nurses

with burnout are also less likely to report non-significant errors or close calls

(Halbesleben, Wakefield, Wakefield, & Cooper, 2008). In a healthcare industry with

significant nursing shortages, it is easy to see how a nurse in the long-term care setting

could become burned out. A non-punitive, performance improvement environment must

be in place for nurses to feel safe in reporting errors. Nurses reported feeling reassured

and respected when the nurse manager shared with them that errors were learning

opportunities and reporting errors would lead to preventative measures (Luk, Ng, Ko,

Ung, & Ung, 2008). This type of environment is not present in most of today's nursing

homes.

The nursing home's reputation is also in jeopardy when errors occur, and their

source of funding may be eliminated if multiple errors or a significant error occurs with

an established pattern of errors resulting in resident harm or death. If the survey team

finds that the nursing home's deficiencies place its residents in immediate jeopardy, the

home may face denial of payment, civil monetary penalties, appointment of temporary

management, closure, or ordered improvements to bring the home into compliance

(Cornell University Law School, 2008). Reduction of error and improvement in resident

care would result from a safety culture initiative.

Ultimately, changes would result in a safer environment for those seniors and

individuals residing in America's nursing homes. Results may prompt changes which

would allow nursing homes to provide residents with a device that would insure correct

identification. If current methods are not appropriate, an electronic device may need to

be developed which would transmit patient data to an electronic medication

administration system. Caregiver and governmental concerns about resident dignity and quality of life may be overshadowed by the resident's and staff's desire for a safe environment that such a device may offer.

Theoretical Framework

This investigation was based upon the theoretical framework of Sister Callista Roy's Adaptation Model. Developed by Sr. Callista Roy in 1970, she has continued to refine and expand its application through the present day. Roy's theory is based on the interaction of the person and their environment and how the individual adapts to changes (Tourville & Ingalls, 2003). Yoder (2005) and Farkas (1981) state that a nurse's goal in using Roy's Adaptation Model (RAM) is to promote adaptation through interaction between the person and their environment. Roy (2008) found that nurses use knowledge in specific ways. First, a nurse knows individuals in various life settings and relates to them. Roy refers to this as caring. Secondly, a nurse is aware of the interaction between the individual and the environment. This could include the immediate surroundings or the global earth, ecology, and well-being of other human beings. Next, a nurse looks for patterns of human behavior within the environment. And finally, a nurse utilizes knowledge to bring about positive change in how an individual interacts with their environment to promote health.

The RAM defines adaptation both as a process and outcome. A person is a holistic, adaptive system who uses conscious awareness and choice to create integration between themselves and the environment (Roy, 2008). The model directs research into how individuals are able to adapt to their environment. This adaptation can be viewed from two perspectives: one from the patient's adaptation through interaction with the

environment, and one from the effect of nursing care on adaptive processes (Fawcett & Tulman, 1990). The individual's world is made up of the internal and external environments. Roy classifies the environment as three identified sources of stimuli in the external or internal environment of the individual that may cause adaptation. These include focal, contextual, and residual stimuli. Focal stimuli would include those things having an immediate, direct affect on the individual. It is an object or experience that is most present in consciousness. Contextual stimuli would include the home environment and all other stimuli present. Contextual stimuli may contribute to the effect of a focal stimulus. These stimuli are present, but may not capture the attention of the individual. Residual would include internal stimuli of values, attitudes, and past experiences, or they may be external. It may be unclear if a residual stimulus was having an affect or not. There may not be a conscious awareness of the effect the stimulus is having (Roy, 2008; Tolson & McIntosh, 1996).

Adaptation occurs in four modes, which include physiological, self-concept, role function, and interdependence (Farkas, 1981; Roy, 2008). The physiologic mode is associated with how the individual interacts as a physical being in the environment. Basic physiologic needs are identified as oxygenation, nutrition, elimination, activity and rest, and protection. Self-concept is associated with personal integration which is body image, the personal self, self-ideal, and the moral-ethical-spiritual self. Role function refers to the role one has in human systems. The human need is to know who one is in relation to others. Interdependence is focused on the give and take relationship through interactions with others. Relational integrity is seen as the basic need in this mode.

According to Roy (2008), there are three levels of adaptation. Integrated adaptation refers to the individual whose life is in balance with the environment and processes are working to meet one's needs. Compensatory adaptation refers to one experiencing a challenge to be able to integrate life processes in a changing environment. The third level of adaptation is referred to as compromised and exists when the individual has not been able to integrate life processes with the environment and has a problem adapting. Nursing interventions are directed at manipulating the stimuli in the environment to yield a positive adaptation response by the individual.

Roy (2008) defines the goal of nursing as "the promotion of adaption in each of the four modes, thereby contributing to health, quality of life, or dying with dignity" (p.49). In this theoretical framework, a nurse works with the resident to enhance relationships and interactions with the environment. Personal and environmental transformations will occur as a result of nursing interventions that promote adaptation. Interventions are selected that promote adaptation by changing stimuli or by strengthening adaptive responses.
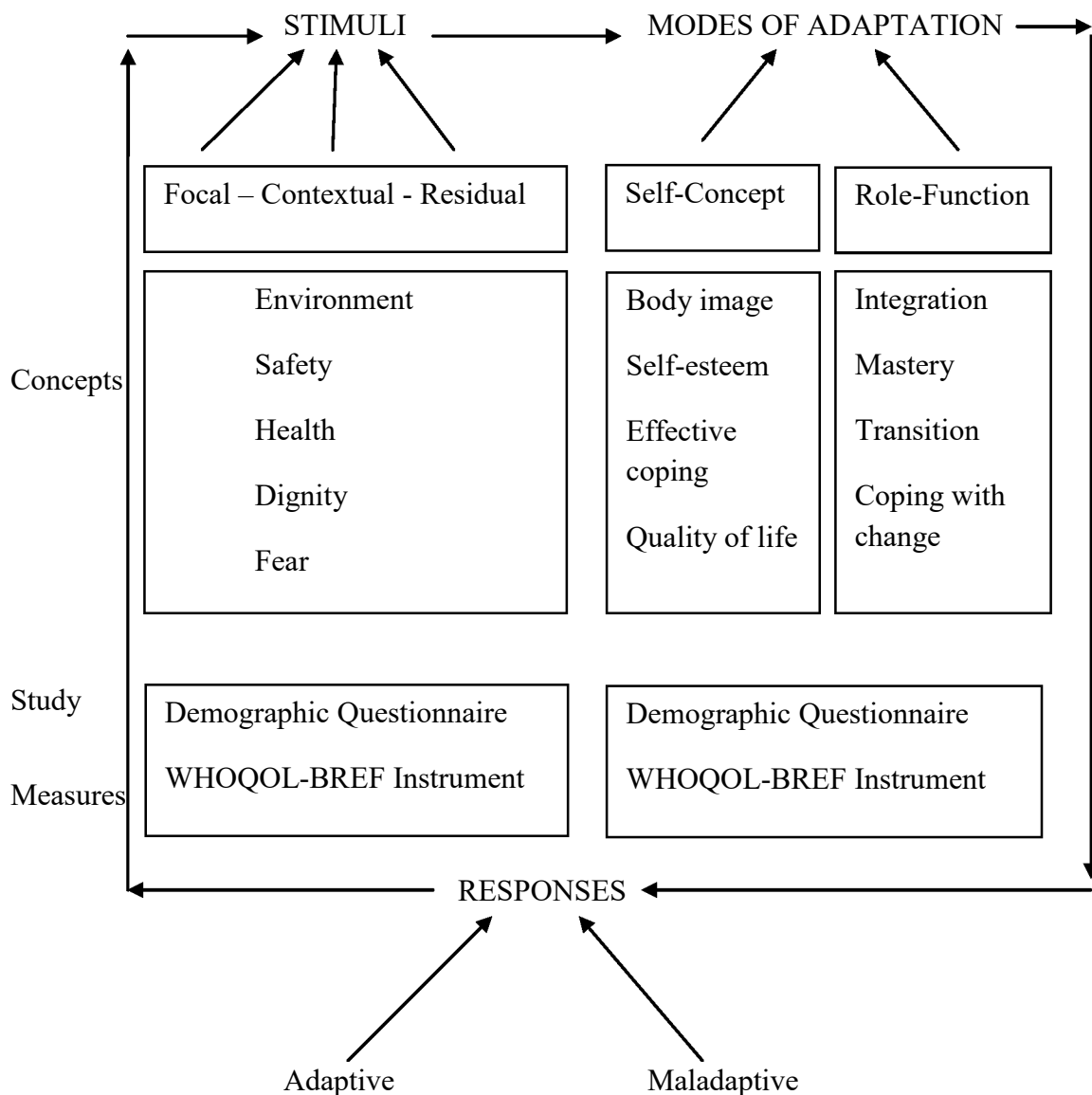
Figure 1. Adaptive Model

Note. From "Using the Roy Adaptation Model: A Program of Research in a Military Nursing Research Service," by Linda H. Yoder, 2005, Nursing Science Quarterly, 18(4), p. 322. Copyright 2005 by Sage Publications. Adapted with permission.
World Health Organization Quality of Life (WHOQOL)

Figure 1 is adapted from a model developed by Yoder (2005) who used the RAM

as the theoretical basis for a study involving burn patients and their adaptation in the

physiologic and psychosocial modes. Factors in the environment function as forms of stimuli, which prompt modes of adaptation. In the current study, self-concept and role-function are evaluated for adaptive response based on the demographic questionnaire and the World Health Organization's Quality of Life – BREF instrument.

Definitions

The following terms are primarily defined as they apply to the Roy Adaptation Model and the World Health Organization's (WHO) definitions:

1. Quality of life: The WHO (1998) defines quality of life as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns." This definition views quality of life as an individual's subjective evaluation of his/her cultural, social, and physical environment. It incorporates the individual's health, psychosocial status, independence, beliefs, and relationships within their environment. This variable is operationalized by the 26-item, four-domain, WHOQOL-BREF instrument developed by the World Health Organization, which has been tested for validity in various languages and settings.

2. Willingness to Wear an Identification Device: Willingness to wear an identification device is acceptance of the choice, or favorably inclined to wear on one's person, a device with identifying information such as name, date of birth, room number, medical record or account numbers, and physician name. This could include a typical plastic identification band, one that looks like jewelry, or

possibly an electronic transmitter device. This is operationalized by the resident's willingness or refusal to wear the device on a Likert-type scale from $1 – 5$.

3. Environmental Domain: Roy (2008) defines environment in terms of those things that affect the development and behavior of humans as adaptive systems. This would include external and internal conditions, circumstances, and influences affecting an individual's adaptive response. Environment is operationalized through the environmental domain of the WHOQOL-BREF instrument. Facets of the environment domain include: financial resources; freedom, physical safety, and security; health and social care: accessibility and quality of care; home environment; opportunities for acquiring new information and skills; participation in and opportunities for recreation/activities; the physical environment (pollution/noise/traffic/climate); and transportation.

Research Questions

1. What is the relationship, if any, between a nursing home resident's quality of life and his/her willingness to wear an identification device?

2. What is the relationship, if any, between a nursing home resident's perception of the environmental domain and his/her willingness to wear an identification device?

3. What are the differences, if any, between gender of nursing home residents and the willingness to wear an identification device?

Assumptions

1. Participants were nursing home residents who were deemed competent and were alert to be able to complete the instrument.

2. Residents answered the instrument's questions in a truthful manner.

3. The researcher had no bias in presentation of the instrument to the resident.

4. The resident had no fear of retaliation from nursing home staff for answering the instrument in any particular way.

5. Resident responses were kept confidential from nursing home personnel.

6. The resident was able to read and comprehend English.

Delimitations

The delimitations for this study include:

1. The sample of nursing home residents was drawn from those who have been a resident in the nursing home at least six months, so that the effects of adaptation to the new environment were minimized.

2. Residents were aged 65 years or older, who were able to read and comprehend the English language and have intact cognitive function to appropriately respond.

3. The locations of the nursing homes were in towns located in rural areas of two Midwestern states.

4. Residents who were not mentally able to answer the questions on the instrument were excluded from the study because their data may skew the investigation results.

Limitations

The limitations for this study include:

1. Findings were restricted to aged, nursing home populations and can not be generalized to acute-care, assisted living, or community settings.

2. Although nursing home populations are similar, this study only included nursing homes located in rural communities in the Midwest and cannot be generalized to urban or other regions of the U.S.

Summary

Research done in the U.S. healthcare industry demonstrates that the healthcare system is prone to error. Although not studied as extensively as acute-care hospitals, nursing homes have also demonstrated comparable error rates to hospitals. The concern for safety in care delivery to nursing home residents is an important factor for the nursing profession and the nursing home industry to consider. The means to enhance resident safety could include the use of identification devices, which are currently prohibited for various reasons within the nursing home environment.

Investigations are needed that include a nursing home resident's perception of his/her quality of life, and whether he/she is willing to sacrifice dignity and home-like environment for enhanced safety may change current thinking regarding current nursing home practices and processes. Individuals in their private homes use and wear electronic devices to summon emergency help. Nursing home residents are at risk for harm based on current medication administration practice. This investigation sought to determine if nursing home residents might be willing to wear an identification device. It may lead to future discovery of a new technology that will meet both the need to maintain autonomy and home-like environment for the nursing home resident, but also the need to ensure a culture of a safe environment.

CHAPTER II – REVIEW OF LITERATURE

The majority of articles related to healthcare errors and patient safety are focused on those occurring in the acute-care, hospital setting. There are fewer articles related to those events happening within the nursing home industry, but they are worth exploring in light of the concerns for safety of nursing home residents. This chapter reviews current literature involving medical errors in nursing homes, quality of life for the elderly in nursing homes, use of identification measures and standardization of identification bands, and studies utilizing the Roy Adaptation Model (RAM) as a theoretical base. Some errors begin when the patient/resident changes between levels of care or at the transfer point between hospital care and nursing home care. The complex process of ordering, transcribing, and administering medications results in additional errors. Some errors are a result of polypharmacy through the resident's use of multiple physicians and the presence of multiple co-morbidities. Patient gender and race, RN staffing changes, and specific pharmacologic agents have also been found to contribute to errors (Picone et al., 2008).

How quality of life is perceived is a variable of this investigation. Our society places restrictions on nursing homes based on perceptions of residents' quality of life and quality of care concerns. The RAM focuses on adaptive behaviors within the context of the individual's environment. A nursing home resident's ability to adapt to a home-like setting within an institutional, long-term care environment is the theoretical basis of this investigation.

Transfer Medication Errors

Midlov, Bergkvist, Bondesson, Eriksson, and Hoglund (2005) used a non-experimental, exploratory, ex-post facto design to evaluate the nature and frequency of errors in medication with patients who were transferred between primary and secondary care. They hypothesized that errors were occurring in the transfer of medication lists when an individual was transferred from the hospital to the nursing home or to the home ($n = 35$), and also when the resident was transferred to the hospital or admitted from home ($n = 34$). The mean age for both groups was 85 years old. Women comprised 21 of the participants in each group. The average number of prescribed drugs used by individuals was 11. Records were reviewed by two reviewers, when a discrepancy occurred, a third reviewer was consulted. In 758 medication transfers, only 2 required a third person's review for coding. When patients were transferred from the hospital, 54% experienced at least one medication error. When patients transferred to the hospital, 85% of those patients experienced at least one error. The most common error on transfer to the hospital was withdrawal of the drug. The most common error on transfer to the nursing home was an erroneously added drug. Drugs taken on an as needed basis were more likely to have errors than continuous use drugs. The percentage of errors for continuous use drugs on admission to the hospital was 18.7% and as needed drugs was 27.7%. The percentage for continuous use drug errors was 11.2% at hospital discharge and was 42.4% for as needed drugs. There was no significant influence of the variables for living in a nursing home versus home, number of drugs used, sex, and type of hospital. The use of a medication dispensing system was found to be a cause of

significant error when the patient was discharged from the hospital, which is a system believed to reduce the likelihood of errors. Researchers found that one in five medications involved an error at the time of transfer between levels of care. Medication errors are more likely at transfer because many elderly patients do not know the names or doses of their medications. Strengths of the study were the agreement between independent reviewers and the use of actual patient records at the time of admission or discharge from a hospital. A limitation of the study was that it involved facilities in Sweden, rather than in the United States. Statistical analysis presented was limited to descriptive data. Although significance and non-significance were reported, statistical data was not provided to support the statements. This study has implications for a study of resident safety related to medication events and the sources of those errors.

Comparison of Errors between Types of Facilities

Much of the focus in the U. S. has been on medical errors occurring in hospitals following the Institute of Medicine report in 1999. Very little research has been done in nursing homes compared to those done involving acute-care settings. The question of whether nursing home rates were comparable to hospital rates was addressed in a study by Barker et al. (2002) that assessed error rates between six Joint Commission Accredited Hospitals, six non-accredited hospitals, and six skilled nursing homes in each of the states Colorado and Georgia (total of 36 sites). Nursing units were chosen from those that were able to produce a sample size of 50 medication doses. Four nursing units from each facility were included for a total of 200 medication doses. Categories of errors used included: wrong dose, extra dose, omission, wrong route, wrong technique, and wrong time. The mean error rate for sites in Denver and Atlanta was 19% (605 of 3,216 doses).

The range between facilities was 0 – 67%. The most frequent errors were wrong time (8%), omission (6%), and wrong dose (3%). Distribution of error rates was similar across facility types, but substantial variation existed between sites (0-67% error rates). There were no significant differences between facility types and size of facility. Colorado sites had a significantly higher error rate (23.4%) than Georgia sites (13.8%). The researchers were unable to determine the cause for this difference. The same research pharmacist was used for all sites. The results of this study are significant in that error rates were found to be consistent across facility types and sizes. It also demonstrates the fact that errors are common, involving 19% of medications delivered or one in five doses are given in error in a typical facility. If a nursing home resident received 10 doses per day, the resident would be subjected to two errors every day. Based on this study, 7% were classified as potentially harmful, which would represent an average of 40 events per day for every 300 patients/residents.

An observational study by Patterson, Rogers, Chapman, and Render (2006) evaluated nursing practice during medication passes. Acute care and long-term care units within three Veterans Administration Hospitals were included, and the practice of bypassing bar code safety measures referred to as "workaround" strategies was observed and analyzed. Patients in acute care received fewer medications ($M = 8$) than those in long-term care ($M = 14$), which has also been shown in other studies presented. Workaround strategies were classified into two groups: medication administration and patient identification. Patients were identified by an ID band with their social security number as a bar code. When scanned, their medication administration record appeared on a computer screen. Scanning could be bypassed by typing in the social security

number, or by scanning an alternate band not on the patient's person. In acute care,

seven nurses were observed typing in the social security number and seven nurses in

long-term care were observed doing the same. Five nurses in long-term care scanned an

alternative band not located on the patient's wrist. Nurses observed doing this practice

indicated that it was more efficient than scanning the patient's wristband. Interview data

determined this to be routine practice for the individual nurses.

The Patterson et al. (2006) study also found that scanning wristbands was a more

common practice in acute care than in long-term care units ($p = .016$, Fisher's exact test).

Rationale provided by long-term care nurses included issues with the ID band itself and

the fact that the nurses were more familiar with the patient in long-term care and

misidentification was less likely to occur. ID bands were worn longer in long-term care

settings and as a result, they became soiled, twisted, torn, removed by the patient, or ink

quality became affected by bathing.

Administration workarounds were identified as those practices that bypass

standard procedures. These practices included opening and scanning multiple

medications before medications were administered to the first patient. In acute care, one

nurse poured medication in advance, but 10 of 13 nurses in long-term care were observed

pre-pouring medications. One nurse reported scanning two to three ID bands ahead to

save time, and that individual documented the administration of medications after

completion of the medication pass. Two nurses in long-term care scanned and prepared

all their medications prior to administration as a routine practice. This practice was

reported to save time and documented all medications as being delivered on time in the

electronic medical record. Another common practice described was to scan and then

allow other staff to administer the medication, such as creams administered by nursing assistants or by staff coming on duty at the change of shift. These negative practices bypass the technology in use to prevent errors and increase the risk for adverse events to occur. It was more common to bypass safety measures in long-term care units than in acute care units. Observation of practice is known to influence the behavior. The study's authors believe that the nurses observed would have employed recommended practice more so than when not observed, which would have made their negative findings even more pronounced (Patterson et al., 2006). Strengths of the study included the comparison between acute and long-term care and the direct observation of staff practice. Implications from this study include the need to design systems that reduce the ability to circumvent the features of the system, to streamline systems for efficiency, and to utilize equipment and devices that make scanning and identification reliable, easy, and effective.

Errors Specific to Medication Events

Nursing home residents rely on their caregivers to manage and administer their medication regimen, which includes ensuring accuracy of medication lists, physician orders, correct dosage, observation for potential drug interactions, monitoring of medication effects, and correctly administering the medications. Nursing home staffing patterns are different from acute care. To meet care needs in a fiscally challenged environment, nursing homes have added non-licensed, certified medication aides (CMA) to deliver medications. In a printed interview with Dr. Jerry Gurwitz, a leading expert in medical errors in nursing homes, there were three key factors needed to reduce medication errors in nursing homes. The first one mentioned is that the entire culture of the clinical setting of nursing homes has to change and have recognition that adverse

medication events occur. The second factor is the ability of staff to report events without fear of retaliation, and the third factor is the need for education and awareness of just what constitutes an adverse drug event (Edwards, 2001). The potential for errors could be as high as 350,000 events in the U.S., and one half of these would be considered as being preventable (National Institute on Aging, 2000).

The Massachusetts study is a benchmark study of adverse drug events (ADE) occurring in nursing homes and has been frequently cited by other authors. Gurwitz et al. (2000) and Field et al. (2001) reported the study of 18 nursing homes involving residents ($N = 2,916$) over a 12-month period. Of these residents, ADEs were discovered in 14% (n = 410) of the participants. Designed as a case-control, prospective study, researchers found high ADE rates (1.89 ADEs per 100 resident months), and of those ADEs approximately half were found to be preventable (.96 ADE per 100 resident months). For residents who experienced multiple ADEs, the first event was included and risk factor data were collected as of the date of that event. Events were classified based on seriousness of the effect on the resident. Of the 410 total events, 56.1% were classified as significant, 37.1% were serious, 6.6% were life-threatening, and 1 or .2% was fatal. Those events that were determined to be preventable had 38.1% classified as significant, 51.3% as serious, 10.2% as life threatening, and 1 fatal event (.4%). Analysis of data involved calculation of odds ratios and P values for each categorical variable and paired t-tests for the variables of age and co-morbidity scores. Significance was determined at $p < .05$. Residents who were new to the facility had significantly higher risk of ADE than those who had been there for some time. Residents taking more than five scheduled medications and those taking antibiotics, anticoagulants, antidepressants, anti-seizure

drugs, antipsychotics, cardiovascular drugs, hypoglycemic drugs, muscle relaxants, and sedatives or hypnotics were also significantly more likely to experience an ADE. Counts of medical problems and number of drugs taken have correlation. This study is relevant to the investigation due to the number of nursing home studies that refer to it. It highlights the number of medication related events and the number of preventable events, which is important to this investigation. The significant risk to new residents may involve proper identification of the resident. Initiation and monitoring of medications were also determined to be significant to the risk factor of ADEs.

A later study by Gurwitz et al. (2005) was conducted in two large, academic-based, long-term care facilities. This was a nine-month, cohort study of residents for the number and seriousness of ADEs and whether or not they were preventable. There were 815 ADEs identified, and 42% of these were deemed to be preventable. The ADE rate was 9.8 per 100 resident months and the rate for preventable ADEs was 4.1 per 100 resident months. In this study, preventable errors occurred with greater frequency at the points of ordering and monitoring drug effects. There was significant risk for residents taking medications in several drug categories in this study, as in the earlier Massachusetts study. These medications included: antipsychotics, anticoagulants, diuretics, and anti-seizure drugs. Strength of the study included the size of sampling and the identification and recognition of specific drug classes that validated a prior study and the assessment of preventable errors. Implications for this study is also the demonstrated the high frequency of nursing home medication related events and the large percentage of those that are preventable.

A study by Hansen et al. (2006) examined the different types of errors made in nursing homes. This involved an analysis of mandated reports submitted to a state-wide repository for the state of North Carolina. Prior to 2004, only Tennessee required mandated reporting of nursing home errors. As a result, comparisons between states are limited at best. In a nine-month reporting period, there were 10,920 errors generated from 395 licensed nursing homes. Reports ranged from 0 in one home and 1,648 in another. The 1,648 reported included errors and potential errors. Because of this nursing home's high rate of reporting, it was excluded from the study leaving 9,272 errors reported from 384 licensed nursing homes. To standardize results across various sizes of nursing homes, data were adjusted to a mean number of errors per 100 beds. Medications involved in errors in order of occurrence were: lorazepam (8%), warfarin (6%), insulin (6%), hydrocodone (4%), furosemide (3%), and the fentanyl patch (3%). Some homes opted to report the use of medications on the Beers list, which gave those nursing homes a higher error rate. The Beers list includes 48 medications or medication classes that are potentially inappropriate for use in the elderly (Fick et al., 2003). Nursing homes were then compared between those homes reporting medications prescribed from the Beers list ($n = 261$) and those that did not have prescribed medications from the Beers list ($n = 107$). Independent t-tests were used to compare the two groups with a level of significance at $p < .05$. Errors were higher for Beers reporting homes ($M = 26.9$) versus homes not reporting Beers ($M = 17.6$, $p < .001$). Nursing homes reporting a Beers error in their top ten list of errors also had a higher reporting of errors in prescribing ($M = 1.1$ versus .7 respectively; $p > .05$), documentation ($M = 11.7$ vs. 8.2; $p = .05$), and administration ($M = 15.6$ vs. 10; $p = .01$). Significant to this investigation is the fact that

voluntary reporting was substantially lower (1.8 errors per 100 resident months) than in the Massachusetts study presented above (4.1 preventable errors per 100 resident months), and this probably reflects an under-reported rate of medication errors. This study's strength demonstrated a possible connection between inappropriate medication use from the Beers list and the potential for medication errors. In a safe culture environment, a nursing home needs to evaluate the use of problematic medications, and it also needs to evaluate the processes used in error discovery and error reporting (Hansen et al.).

In 1999, the Centers for Medicare and Medicaid initiated medication reviews as part of the nursing home survey protocols. Surveyors were to review residents' medication regimens to determine if high-risk medications, determined from the Beers list of potentially inappropriate medications for elderly adults, were prescribed. If high-risk medications were prescribed, the surveyor could cite the nursing home for deficient care. Briesacher, Limcangco, Simoni-Wastila, Doshi, and Gurwitz (2005) reported the first study to evaluate whether or not federally mandated requirements made a difference in inappropriate medication use in nursing homes ($n = 2,242$) and compared those results to elderly living in assisted living facilities (ALF) ($n = 664$). Although the elderly in these two groups shared many commonalities, those in the nursing home environment were considered to be more frail and had a greater incidence of disease than ALF residents. The number of medications prescribed for each group was similar with nursing home residents having 7.6 – 8.9 prescriptions, and ALF residents having 7.2 – 7.9 prescriptions. Rates of inappropriate medication use were higher in nursing home residents at the beginning of the study (17.4% vs. 10.3% for ALF), steadily decreased

during the pre-policy period to near ALF levels, and then returned to approximately the same level as at the beginning (17.6% vs. 12.7% for ALF). The risk for residents receiving a drug that was contraindicated with a specified disease increased during the three-year study from 8.1% to 14.7% in nursing homes and from 3.0% to 7.2% in ALFs. Most inappropriate medications reflected new prescriptions, rather than carry over from pre-policy medication lists. Inappropriate medications were prescribed for 25.6% of Medicare beneficiaries in nursing homes and 19% of those in ALFs. Results were believed to be similar between nursing homes and ALFs as physicians generally treat their elderly patients the same regardless of location. The study highlighted the problem of trying to mandate compliance for nursing homes, but physicians have independent practice patterns. Monthly medication use was also noted to have increased during the study from an average of 7.6 to 8.9 medications per resident. With higher numbers of medications, the risk for adverse events increases as previously discussed. The authors of this study call for more effective safeguards for nursing home residents and different means for protecting institutionalized residents from medication errors, which is one aspect of this study.

Cardinale (2000) reported findings from a study that used data from the Medication Errors Reporting Database between 1995 and 1999. From the 609 error reports that involved the elderly, 49% involved dispensing errors, 24% administration errors, 21% prescribing errors, and .5% were monitoring errors. Problem areas identified in this report were inadequate safeguards in distribution, communication breakdowns resulting in transcription errors and illegible orders, and practitioner concerns related to

lack of knowledge and failure to follow protocols, monitor effects, or provide counsel to the residents.

Pelletier (2001) used data collected by nurse surveyors during observed medication passes in Connecticut nursing homes in 1998 and 1999. Error rates in the 28 nursing homes studied ranged from 1% to 13% with the nurse surveyor catching the errors. LPNs made 70% of the errors and RNs made 30%. Medication aides were not involved in medication passes. Most errors involved administration of eye medications, wrong dose, and crushing a time-released or enteric-coated medication. Concerns based on this report are the number of errors observed during a survey inspection, when staff members are more conscious of their actions and more cautious of making an error. Practice when not being observed and resulting error rates would be expected to be higher. Survey guidelines call for a rate less than 5%, but one would have to question if this is an acceptable standard when serious injury or death could result from even one error. Error rates based on staff qualifications and medication types could have implications for this study based on practice and administration techniques.

Comden et al. (2005) in a study of Oregon nursing homes did a prospective, developmental study that used process mapping, control system mapping, failure modes and effects analysis, and socio-technical probabilistic risk assessment to produce risk models for medication delivery. The study involved long-term care facilities ($N = 18$) belonging to six different long-term care chains. The sample of homes was a randomized, stratified sample of facilities across the state of Oregon. Bed size ranged from 88 to 214 ($M = 120$ beds). Modeling groups were separated by prescriber and pharmacy consultants. Top-level events were identified as wrong drug, wrong dose,

wrong resident, and omitted drug/dose. Observations and secret balloting by team members identified short-cuts when nurses, aides, and caregivers administer the same drug to the same resident for years. Non-compliance to policy involved not checking the medication administration record (MAR) and borrowing medications from one resident for another. Other concerns involve ordering and transcription errors, failure to properly identify residents especially when staff is familiar with residents, failure to discontinue medications, and medication omission were the least controlled outcomes in the administration process. One half the nurses observed, jotted a phone order on a scratch paper and did not verify spelling before transcribing it onto order forms. Based on the risk-reduction models, the top two reduction strategies identified were improving communication tools, which should reduce risks .4% for wrong drug and 62.7% wrong dose errors. The second is to verify resident ID with two independent sources. The estimated impact of accurate resident identification is a reduction of error by 42.9% based on the model. The dominate risk is the known, mobile resident. Strengths of the research were the broad base of nursing homes involved across the state, which incorporated rural and urban, large and small nursing homes. Modeling involved review of charts, interviews, and observation of practice. Weakness was the development of one model that accurately portrayed all 16 participating nursing homes and their individual characteristics and resident/staff populations. This study is important to the proposed investigation as it specifically mentions the fact that residents do not wear the typical name bands, making identification difficult. It also includes the various types of errors and provides practice concerns, especially involving known, mobile residents and the higher risk for medication errors.

A study by Antonow, Smith, and Silver (2000) examined nursing staff reporting of medication errors through the creation of an incident report. Although this study involved RN staff from a 232-bed pediatric and referral hospital, the implication for nursing staffs would be similar across clinical settings. An open-ended, response survey was administered to RN staff, and then a multivariate logistic regression analysis was used to identify factors related to medication errors. Variables included the stage of the medication process where the error occurred, the nature of the error, and whether the error was prevented from reaching the patient. Surveys were completed by RNs ($n = 72$), who described 177 errors. From the survey 40.3% of the RNs reported a medication error that occurred in the previous week. Most errors (62.1%) were caught and were prevented from reaching the patient. RNs reported that only 30.5% of known medication errors had incident reports generated. Administration errors were more likely to be reported than prescribing or transcription errors. Wrong medication and wrong dose errors also had a higher reporting rate than uncategorized errors. Errors that were caught prior to medication delivery to the patient were the most likely to not be reported (odds ratio .18; $p = <.001$). This study supports that reporting of errors through traditional methods is not a reliable method of determining type of errors occurring or their frequency. The focus of improvement efforts may be misdirected based on incident reporting alone.

Nursing homes are unique in the healthcare setting in that unlicensed CMAs, in addition to LPNs and RNs, are utilized to deliver medications to residents. CMAs are prepared through a course involving lectures and clinical rotations, and they then take a certification exam. When medication errors occur in the nursing home setting, the

credentials of those administering medication is of concern. Scott-Cawiezell et al. (2007)

evaluated the staff credentials, level of interruptions, and the number of errors attributed

to RNs, LPNs, and CMAs. The study involved five nursing homes in central Missouri

and represented rural and urban settings. A naïve observation method was used with the

observer watching the medication pass without intrusion or preconceived idea of what

was being administered. The medication record was not accessed until after the

medication pass. Following the medication administration pass, the last 90 days of the

record was used to determine if what was observed was reflected in active orders. During

the observation, 3,194 doses were ordered with 3,101 doses being administered and 93

doses were omitted. Medication passes averaged 113 minutes with a range of 8 – 260

medications ($M = 73$) being delivered. Observations included RNs (8), LPNs (12), and

CMAs (19). RNs had more years of experience than the LPNs and CMAs, but the CMAs

had more longevity at the home ($M = 3$ years) compared to the RNs and LPNs ($M < 1$

year for both). RNs were 20.5% of the observations and administered 15.3% of the

observed doses. LPNs were 30.8% of the observations and administered 23.3% of the

medications. CMAs were 48.7% of the observations and provided 61.43% of doses

delivered. From these observed medication passes, RNs had an error rate of 34.6%,

LPNs 40.1%, and CMAs 34.2%. These results were not statistically significant ($p = .82$).

RNs had the highest error rate when wrong time errors were removed. This was

attributed to the fact that RNs also had the most interruptions (39.9%), which was

significant ($p = .0099$). Based on this study, there is no significant relationship between

staff credentials and incidence of medication error. Even though RNs gave the fewest

medications, they also had the highest error rate. Factors that could have influenced this

finding include the number of interruptions an RN faces during a medication pass and the fact that RNs were giving medications requiring integration of clinical data with administration. CMAs had the greater longevity, which could contribute to being a local expert and the ability to be more effective. Nursing home residents are among the most frail and vulnerable population and should have RNs providing all aspects of their care. However, this study demonstrated that CMAs can be effectively used to deliver routine medications without increasing risk of error. Minimizing interruptions during medication passes was also shown to be an effective means of reducing errors.

Quality of Life

The review of literature found several studies involved in investigating nursing home residents' quality of life that occurred in population groups outside the U.S. These included studies done in Canada, Europe, India, and Southeast Asia. Difficulty in accessing nursing homes and residents of nursing homes makes investigations in U.S.-based population more difficult, and there are fewer U.S. studies in the literature involving resident self-reported quality of life studies. Quality of life is a broad concept that can be applied in general terms to society or community well-being or in specific terms to individuals or groups. Increased longevity has made quality of life a serious concern for the elderly, especially in the areas of empowerment and self-determination, security, and safe living environments (Fry, 2001).

Felce and Perry (1995) evaluated various published studies that involved quality of life domains and conceptual models in an effort to define quality of life and its measurement. Early studies in the 1970s and early 1980s focused on adaptive behavior gain as an outcome measure, and there was limited attention given to satisfaction, to

social relationships, and to activity patterns. Environmental assessments became an important factor in evaluating quality of life. Patterns of living, social relationships, participation in community life, personal choice, and family ties became included in the assessment and definition. Personal satisfaction and psychological well-being had not been included in those early works. Works in the 1980s and 1990s included satisfaction with life and the domains of material comforts, health, work, recreation, learning, family, religion, social relationships, finances, and safety. Internal well-being must also be included with measurement of external conditions when determining one's quality of life. Satisfaction and well-being are subjective concepts developed from personal reference and are affected by lived experience and judgment. Satisfaction and well-being depend on the fit between environment, needs, and perception of their situation. Quality of life measurements should include objective and subjective assessments across life domains. The three-factor model incorporates life conditions, satisfaction, and personal values. The value of this model is that only individuals can determine trade-offs between competing aspects of their personal welfare. These trade-offs are an important aspect of this investigation in determining if nursing home residents would sacrifice dignity or quality of life concerns for enhanced safety measures. Quality of life was defined by Felce and Perry as, "an overall general well-being that comprises objective descriptors and subjective evaluations of physical, material, social, and emotional well-being together with the extent of personal development and purposeful activity, all weighted by a personal set of values" (pp. 61-62).

Kane (2001) evaluated the quality of life in long-term care within the U.S. and called for reform. She stated that the quality of life for individuals is compromised by

flawed policies and practices, and the gerontological society is unable to research or evaluate programs to discover the heart of the problem. Excess emphasis is placed on promoting health and safety at the expense of quality of life concerns. Kane stated that it was not difficult to understand why older persons prefer not to be admitted to a nursing home and why family members experience guilt and anguish when they place a loved one there. Thirty percent of older Americans stated they would rather die than be placed in a nursing home. Standardized practices and routines do not fit everyone's life-style, patterns of behavior, and preferences. OBRA 1987 has led to reduction in the use of restraints, but not in their total elimination. The Minimum Data Set (MDS) assessment tool for nursing homes has provided opportunity for tracking quality indicators but not quality of life measures. Kane proposes that instead of taking the view that the best quality of life be consistent with health and safety, health and safety should be "consistent with a meaningful quality of life" (p. 296). Quality of life concepts should therefore be given higher priority in long-term care.

Quality of life concepts developed by Kane (2001) and Kane et al. (2005) included domains that were expressed by outcomes based on individual experiences. These domains included: sense of safety, security, and order; physical comfort; enjoyment, meaningful activity; relationships; functional competence; dignity; privacy; individuality; autonomy/choice; and spiritual well-being. Caregivers and environments can and do affect these domains for better or for worse. Current trends in long-term care that may have an impact on quality of life concerns include: the Americans with Disabilities Act and inequality as demonstrated by those aged 65 years or older being cut from services that are provided to younger Americans with disabilities, the customer-

centered care movement, the growth of assisted living complexes, cultural change movements such as the Pioneer Network in Long-Term Care or the Eden Alternative, and more attention now being paid to the physical environment to reduce stress and enhance stimulation and interest. Quality of life must be seen as a part of the quality of care provided in long-term care and must be made a national issue (Kane, 2001).

Crist (1999) did a comparison study of older Americans (age > 65 years) perceptions of quality life and three living environments: personal home, specialized housing for seniors, and nursing home. Quality of life based on housing types reflects personal choice of housing, the match between autonomy and independence with housing resources, and social support being provided to maintain residence. Independent living has been shown to increase self-esteem, independence, and life satisfaction. Specialized housing, such as senior housing complexes or assisted living, provide minimal staff support, but allow the senior to maintain autonomy and independence. They also provide more opportunities for social interaction due to proximity of similarly aged neighbors. Nursing homes provide the most structured environment with monitored social support. Residents have limited control over daily activities and lack opportunity for decision making and creative expression. The study involved seniors ($N = 87$) living in three types of housing. The Flanagan Quality of Life Survey (Flanagan, 1978) was used to determine fifteen quality of life domains for older persons. Responses were grouped into six categories: physical and material well-being, relations with other people, personal development and fulfillment, recreation, assessment of current housing satisfaction, and general satisfaction.

Results from Crist (1999) demonstrated significant differences between the three groups. In the relationship category, significant differences were found in relationship with spouse ($p = .00413$), with close friends ($p = .0003$), family relationships ($p = .0024$), and having/rearing children ($p = .0025$). Specialized housing demonstrated higher relationship scores to quality of life in all but the relationship to spouse domain, which was highest for personal dwellings. This finding was not unexpected, as a higher number of married respondents lived in their own dwelling. In the personal development and fulfillment category, significant difference occurred in enjoyable and worthwhile work ($p = .0033$) with specialized housing reporting higher quality of life for this variable. For housing assessment, living conditions ($p = .0009$) was higher for personal dwelling subjects. Overall, specialized housing subjects reported higher quality of life in 16 of 18 measures. Personal dwelling subjects were most satisfied with personal needs being met through living conditions. The nursing home subjects were lowest in all but three domains: opportunities for expression, opportunities to provide input, and results from input. Satisfaction with today was highest for personal dwellers, and overall satisfaction was highest for specialized housing dwellers. Nursing home residents reported the lowest satisfaction with today and overall satisfaction scores. Nursing home residents reported the greatest need for family relationships ($M = 1.350$), which was least met in the nursing home environment.

In the Crist study, socialization was determined to be an important component of quality of life. Those who are autonomous, independent, and happy with their current environment are more likely to be healthy and motivated to remain in the positive environment. Important rating for nursing home residents included: living

conditions ($M = 1.57$), family relationships ($M = 1.35$), and personal safety ($M = 1.43$).

A person-environment mismatch occurs as these needs are not met by the living

environment, and quality of life suffers as a result. Weakness of the study included the

absence of other types of senior housing, such as living with children, living with siblings

or other elders, and those living in personal care homes. Important to this study was the

quality of life response by those living in nursing homes.

Quality of life ratings have also been found to be different related to physical

condition of the older adult. Chan and Pang (2007) studied the quality of life reported

between frail (mean age = 83.8) and non-frail (mean age = 82.4) groups in Hong Kong.

The majority of both groups were widowed females. Being frail was defined as aged

over 65 years with multiple diseases and unable to perform one or more activities of daily

living independently. A modified Quality of Life Concerns in the End of Life

Questionnaire (Pang et al., 2005) was used to determine quality of life scores.

Participants ($N = 332$) were from six governmental and two private residential care

homes. Dialect differences caused 28 to refuse to participate, resulting in 287 surveys

being completed. The quality of life score for the frail group was significantly lower than

the non-frail group ($p < .001$). Subscales for the two groups were significant in physical

discomfort ($p = .001$), existential distress ($p = .001$), and negative emotions ($p = .037$).

The most undesirable subscales for both groups were existential distress, food-related

concerns, and value of life. The belief that life has meaning can be lost when one is

dealing with feelings of loss, isolation, fear, and anger. Isolation may result from illness,

disability, social withdrawal, or from the feeling of being a burden on others. Lack of

autonomy, privacy, and social networks frequently occurs in the nursing home

environment. Older persons may reflect back on their lived experience. Most residents in this study did not have a sense of integrity but rather a sense of despair. Similarity between both groups included their perception of a negative value of their own lives. As a cross-sectional study, causal inference could not be delineated. This study has significance related to quality of life studies involving nursing home populations that include frail and non-frail elderly.

A study of nursing home residents' perceptions of quality of life is dependent upon the ability of the individual residents to self-report. Although there is disagreement on the domains used in quality of life studies, there is agreement that the measurement should focus on the subjective experience of an individual. There is a portion of the nursing home population that may not be able to self-report or may lose the ability to self-report during their stay due to dementia. Dementia affects more than 50% of residents aged 65 years or older who live in nursing homes (Robichaud, Durand, Bedard, Ouellet, 2006). This makes tracking a resident's quality of life across time difficult. Gerritsen, Steverink, Ooms, de Vet, and Ribbe (2007) evaluated the role of cognitive impairment and the ability of residents to self-report on quality of life measurements. Ten nursing homes in the Netherlands were included in the study with a maximum of 30 residents from each home; half of the residents were from medical units and the other half from geriatric dementia units. Self-report scales used included the General Quality of Life Questionnaire (GEN-QOLQ) (Brod, Stewart, Sands, & Walton, 1999), the Philadelphia Geriatric Center Morale Scale (PGCMS) (Lawton, 1975), the Positive and Negative Affect Scales (PANAS) (Watson, Clark, & Tellegen, 1988), the Depression List (DL) (Diesfeld, 1997), the Geriatric Depression Scale (GDS) (Brink et al., 1982), the

Mini Mental State Examination (MMSE) (Folstein, Folstein, & McHugh, 1975), the GIP-

sad behavior as a subset of the Behavior Observation Scale for Geriatric

Inpatients (GIP) (Verstraten, 1988), and the Minimum Data Set (MDS) Depression

Rating Scale (DRS) (Burrows, Morris, Simon, Hirdes, & Phillips, 2000). The study

population ($N = 227$) was divided into four groups based on cognitive scores from the

MMSE: very low cognition, low cognition, moderate cognition, and high cognition.

Mean age was 80.5 (*SD* 9.26; range 52 – 100). In the high cognition group, all scales

could be completed by 94 – 100% of the residents. In the moderate cognition group,

scales except the GEN-QOLQ and the PGCMS could be completed by 91 – 91% of the

group. The low cognition group was able to complete the following: DL (100%),

PANAS (94%), GEN-QOLQ (80%), and the PGCMS and GDS (72%). Of the very low

cognition group, 43% were able to complete the DL, and only 21% were able to complete

the other scales. The study demonstrated that the DL scale could be administered to most

residents, and even those with very low cognition could complete it 43% of the time. All

scales had acceptable internal consistency except for the PANAS and PGCMS. The

strength of the study was that one can use screening questions with cognitively impaired

individuals, if the questionnaire were tailor-made to that audience. The impact of this

study reflects the possibility that quality of life screening can be tailored to meet the

cognitive level of nursing home residents. However, the ability to know whether or not

the cognitively impaired resident understands the question and answers as a true

reflection of his/her inner state is uncertain. Reliability and validity of self-reporting may

not be possible with residents who have lower cognitive functions.

Research and quality improvement efforts in nursing homes have been focused on quality of care issues until recently, and quality improvement in nursing homes continues to be driven by care concerns. Quality measures published by the Centers for Medicare and Medicaid Services (CMS) have only two that could be included in quality of life subjective measurements. These are pain and depression or worsening anxiety (CMS, 2009). Quality of life for frail, older persons is becoming an important outcome measurement. Multiple domains must be considered and those used for the general population may not be appropriate for nursing home residents. Kane et al. (2005) evaluated measurement of quality of life domains based on surveys from healthcare workers, residents ($n = 67$), and residents' families ($n = 68$). Eleven nursing homes were selected in Florida, Minnesota, and New Jersey. Healthcare workers included RNs ($n = 28$), LPNs ($n = 28$), certified nursing assistants (CNAs) ($n = 81$), activities personnel ($n = 14$), social workers ($n = 12$), and physicians ($n = 21$). Three hypothetical nursing home residents were created: the physically intact/cognitively impaired resident; the physically/cognitively impaired resident; and the physically impaired/cognitively intact resident. Seventeen domains of quality of life questions were presented with responses based on the three created residents. A survey instrument was developed from a parent Health-Related Quality of Life (HRQoL) instrument (Mostyn, Race, Seibert, & Johnson, 2000).

ANOVA analysis was used to compare variables between participant groups. For the physically impaired/cognitive intact scenario, two domains had significant difference: making choices, and food and dining. Family members rated making choices lowest ($p < .5$), and physicians rated food and dining as lowest ($p < .5$). The physically

intact/cognitively impaired scenario demonstrated the greatest variation across respondents. Ten domains showed significant variation between groups: comfort, staff dealing with pain, independence, privacy, pleasurable activity, food and dining, possession safety, spiritual needs met, values respected, and anxiety/boredom (all $p < .5$). Physician and family members provided lower ratings than other groups. Resident ratings were significantly lower than RN/LPN ratings for comfort, and resident ratings were lower than CNA ratings for food and dining. In the physically/cognitively impaired scenario there were two items that demonstrated significant differences: pain and anxiety/boredom. RN/LPN ratings were higher for comfort than resident ratings in this scenario as well. It is important to note from the study that raters of quality of life domains have different levels of importance attached to each domain. Differences in rating occurred based on the physical and cognitive level of the mock resident. The resident with lower cognitive function also showed significantly lower quality of life scores than those with only physical impairment. Quality of life scores should be determined separately for residents with or without cognitive impairments. For physical impairment, based on this study, a general quality of life score would be sufficient. Weaknesses of the study included a sample based on convenience and a large number of analyses that could have introduced type 1 errors. The study is important in that measures to determine quality of life for nursing home residents are available and should be applied to nursing home residents.

Proxies are used to respond in health surveys rather than having direct feedback from individuals of interest. This is true for nursing home studies when staff or families provide responses for residents who may be too ill, have poor vision or hearing, or are

cognitively impaired. Kane et al. (2005) studied proxy sources related to nursing home resident's quality of life. Quality of life scores were completed by residents, staff proxies ($n = 1,326$), and family proxies ($n = 989$) from 40 nursing homes in five states. A questionnaire was developed using a Likert-type scale 1-4, with 4 representing a higher quality of life. Staff and family questionnaires paralleled the residents' questionnaire except for the domain of spiritual well-being. Pearson correlation statistics were used to make comparison between groups. Results demonstrated that in over half the cases, proxy mean scores were within 1 SD of the residents' means. Family proxy and resident reports were correlated at .14 to .46 (all $p < .000$). Staff proxy and resident reports were correlated at .13 to .37 (all $p < .000$). Correlation of mean levels between facilities for staff proxies was .26 to .64 (generally $p < .05$). Domain scores for residents with higher cognitive function were 78% or more compared to 35% for the lower cognitive functioning groups. Study authors rejected the use of proxies based on the argument that internal assessment of the mental state of an individual is best done by verbal expression of the individual. Weakness of the study was the use of different instruments for residents and proxies. Implications are that staff members respond differently from residents under their care due to differences in perception. This highlights the need to do self-response in quality of life studies. If staff members are used as proxies, they need to assess aspects of the resident's life and experiences to anticipate needs and preferences of the resident in order to provide them more customer-centered, sensitive care.

Mittal et al. (2007) examined the quality of life perceptions in a study to determine if there is a gap in the perception of residents' quality of life versus the perception of residents' quality of life provided by caregivers. The researchers used a

longitudinal experimental design to determine the effects of quality improvement

activities on residents' quality of life in two nursing homes in western Pennsylvania.

Three data points were collected described as Wave 1 (n = 223), Wave 2 (n = 227), and

Wave 3 (n = 218). Overall participation rate was 62% across all three waves and was

similar between the two homes. Quality of life was measured using the Resident Quality

of Life instrument with a Likert-type scale 1-4 and eleven domains (Kane et al., 2003),

which included: physical comfort, functional competence, privacy, autonomy, dignity,

meaningful activities, enjoyment: food, individuality, relationships, security, and spiritual

well-being. Means in Wave 1 ranged from 2.88-3.12; in Wave 2 (*M* = 2.75-3.29); and

Wave 3 (*M* = 2.62-3.23). Results demonstrated high correlation among the eleven

domains (.71 to .89; all *p* < .001). Staff surveys were done to correspond to the three

waves of resident measurement. There were three employee groups: Group 1 (*n* = 325),

Group 2 (*n* = 318), and Group 3 (*n* = 331). Participation of the employees

was 76%, 75%, and 72% respectively. Clinical staff rated the residents' quality of life on

each of the 11 domains. The residents' scores were then subtracted from the employees'

rating and a gap score resulted. Positive gap scores indicated employee over-estimating

resident perceptions and negative gap scores indicated under-estimating resident

perceptions. The results from the study demonstrated consistently negative gap scores

(30 out of 36) with employees having lower perceptions of the quality of life of residents

than residents do. Background factors such as the nursing unit the resident lived on and

the job satisfaction level of the employee also influenced perceptions

 The above results demonstrated that the perception gap is largely negative with

caregivers having a lower perception of the residents' quality of life than residents did

themselves. Job satisfaction and background factors were found to have a significant

impact on the perception gap. Caregivers are impacted by job satisfaction and their

background factors and consistently underestimate the residents' quality of life rating.

Because of frailty and cognitive issues with the geriatric population, caregiver-ratings of

quality of life must be considered. As job satisfaction improves, the perception gap

approaches zero. Strengths of the study were the steps taken to ensure homogenous

samples between residents and caregivers over time, demonstration that caregivers

consistently underestimate the quality of life of residents, and a fairly large sample size

was included in each longitudinal measurement. One weakness of this study was the

limitation of two nursing homes in a narrow geographic area. Another weakness was that

employee ratings included cognitive and non-cognitive residents, but only cognitive

residents completed the survey. Implications for this study are to have all cognitively

intact residents provide self-reporting on quality of life measurements. This is not always

possible with today's nursing home population, and so the next best would be for staff

and residents to have similar rating scores to reduce caregiver bias. Proxy ratings need to

more closely mirror those of nursing home residents when those residents are cognitively

impaired. It also pointed out that reports of quality of life reports may be negatively

biased if completed by caregivers who are dissatisfied.

An ethnographic study was done which looked at resident adaptation to the

nursing home by Kahn (1999). In his notes, he commented that the environment was

strange as it reminded him of a hospital, but not quite a hospital. Residents of nursing

homes must also come to grips with this strange environment and to be able to adapt

successfully to insure a quality of life. Data collection occurred over a nine-month period

when qualitative interviews were conducted involving 21 residents: age ($M = 85.5$ years),

female ($n = 19$), and male ($n = 2$). All participants had major health problems and 76% of

the participants could not ambulate without assistance. The length of time residents had

lived in the nursing home ranged from 3 months to 10 years ($M = 2.5$ years). The

repeated phrase, "making the best of it," reflected the aspect that it was home, but not

quite home. This phrase was then developed into four dimensions: recognizing the

ambivalence of the situation, downplaying negative aspects, having no options, and using

the human will to transcend the institutional environment. Ambivalence is reflected in

the nursing home environment with loss of control and powerlessness, but also being a

place of shelter and respite with their diminished physical condition. Sharing negative

aspects reflected an undesirable or non-normative behavior. Comments indicated that

complaining was not useful to anyone. Participants believed they had no other options in

their living situation. The residents became reconciled to the fact that they had to live in

the nursing home. Two themes were repeated: they needed care, and living with children

or others was not an option for them. They recognized the need for care. A positive

experience was determined to be an act of will. Their presence and experience in the

nursing home was not passive, but an active process that required effort on their part.

The outcome of this activity was to be satisfied or contented. One item that made the

most difference in being satisfied was the ability to have a private room. A private room

restored the resident's sense of privacy and autonomy. The strength of the study was the

demonstration that symbols of the healthcare environment and home-like symbols within

the resident's room have an effect on the resident's perception of their environment. This

finding is important to this investigation as medication passes reflect the intrusion of the healthcare environment into the resident's home environment.

A Canadian study by Bourret, Bernick, Cott, and Kontos (2002) evaluated resident and staff perceptions of mobility as a domain of quality of life in a qualitative study. Both groups found mobility to be essential to a resident's quality of life and well-being. Loss of mobility was seen as a stigma and assistance devices were viewed as symbols of loss. This exploratory, qualitative study which included nursing home residents ($n = 20$) and nursing staff ($n = 15$) was conducted to determine what it means to be mobile from a nursing home resident's perspective. Themes expressed by residents included their desire to care for oneself, but having to rely on others; to be free to come and go; to have one's own space; and the freedom to be able to independently move around. Nurses also associated mobility with freedom and autonomy. Mobility was seen by both groups as something beyond moving. It included feelings of control and independence and contributed to the resident's quality of life. Attitudes, such as will power, determination, and desire, enhanced resident's mobility. Nurses in this study described the environment as the resident's home. Residents in contrast never described the facility as home. They referred to the facility as a jail in relation to mobility and accessibility. For a nursing home to feel like home, residents must be provided resources to maintain independence and mobility. Strength of the study was demonstration of the importance of mobility in quality of life for nursing home residents. Imposed dependency is common in nursing homes where residents, who are capable of independent function, are not allowed to do so by institutional policies or safeguards. Mobility has also been shown to place the resident at higher risk for medication error. Similar comparisons can

be drawn with loss of control for medication use and administration through nursing policies and regulatory safeguards. Individuals capable of controlling their medication regimen are not permitted to do so.

Residents' physical and cognitive declines contribute to patterns of dependency. Nursing homes fill the need for medical and nursing care that meets the demands of governmental and regulating agencies. Their efforts to create a home environment fall short of resident expectations simply by the fact that they must also meet the added function as a healthcare facility. Rash (2007) pointed out that alarms, medical equipment, and interruptions from overhead speakers were constant institutional reminders. Her qualitative study of residents from two Florida nursing homes evaluated the social support of staff and families, which she found to be ineffective and inconsistent. Residents are labeled as feeders, have to wear bibs, and are told when to eat and what to eat. Caregivers cut and prepare residents' food, tell them what order to eat their food, and tell them when to swallow. Residents respond in a childlike manner to the treatment they receive, or they exercise independence by pushing food away or by covering their mouths. Resident interactions appeared to be superficial. When residents engaged in conversation, they did it when personnel were not paying attention. Activities were not inspiring and did not stimulate interaction. Nursing interventions occurred as interruptions regardless of the activity of the resident.

Social support in the nursing home environment should include establishment of homelike environments, independence, interdependence, and activities that promote interaction. Routines and regimens, isolation, and dependence detract from social

support. Residents should be released from a sick role and be encouraged to exercise

independence in an environment that promotes self-care (Rash, 2007).

Use of the WHOQOL-BREF Instrument

Taylor, Myers, Simpson, McPherson, and Weatherall (2004) used the World

Health Organization Quality of Life-BREF (WHOQOL-BREF) instrument to determine

the quality of life reported by individuals with rheumatoid arthritis (RA). A sample of

patients with RA ($n = 142$) were randomly selected from a regional disease register and

completed the survey by mail. An additional group ($n = 72$) of consecutive inpatients

with an RA diagnosis completed the instrument. Test-retest reliability was adequate with

an interclass correlation coefficient (.71-.91). Internal consistency was adequate except

for the social relationships domain (Cronbach's alpha .64-.87). The study was completed

in New Zealand using the Australian version of the WHOQOL-BREF instrument.

The WHOQOL-BREF instrument has been developed in different versions to be

used for various populations world-wide and measures four domains: physical health,

psychological, social, and environmental. All four domains contributed significantly:

physical health (beta weight .297, $p < .001$), environment (beta weight .372, $p < .001$),

psychological (beta weight .379, $p < .001$), and social (beta weight .282, $p < .001$). The

researchers hypothesized that inpatient treatment would mainly affect the physical health

domain, but the patient's perception of quality of life showed significant correlation

between all four domains on the WHOQOL-BREF instrument. This was interpreted as

when the domain scores changed, it represented a meaningful change. Researchers

concluded that the instrument has adequate psychometric properties to be used in patients

with RA and may be useful in assessing treatment across different disease states. The

strength of this study was the random selection of participants in the non-hospital group

and the comparison to an inpatient group of patients with RA. The inpatient group,

however, was not based on random selection. Limitation of the study was that it was

done in New Zealand, a limited geographical region which limits its ability to be

generalized to U.S. populations. This study is of interest in this investigation as it

provides statistical relevance for the instrument selected to measure quality of life in a

nursing home population.

A quality of life study to determine the variance between chronically ill elderly

and their family caregivers was done by Chung, Hsu, Wang, Lai, and Kao (2007) using

the WHOQOL-BREF instrument that had been adapted for use in Taiwan. Perceptions of

quality of life affect the demand for long-term care services and decision making related

to long-term care services shared between the elderly and their family caregivers. The

goal of care for the elderly with chronic disease is not to delay death, but to raise the

health related quality of care. Methodology for the study involved administering the

WHOQOL-BREF instrument (WHOQOL Group, 1998) to match pairs of elder/family

caregivers ($N = 267$). The mean age of elderly participants was 74.3 years. Male

participants (54.3%), female (45.7%), and married (72.3%) made up the demographics

for the elderly population. Spouses served as family caregiver for 54.7% of the elderly.

Mean scores for the elderly in the four domains were 12.3 to 13.6, which represented a

"moderate" quality of life. Means scores in the family caregiver group ranged

from 13 to 14.9, which also represented a "moderate" quality of life. The domain with

the most difference was in the physical domain, where family caregivers scored 1.8

points higher than the elderly patient. Elderly patients' gender, activities of daily living,

marital status, and presence of a primary family caregiver were predictors of variation between elderly patients and their family caregivers. Paired-*t* analysis was done for the four domains between the two groups and provided the following results: physical (t = -9.49, p = .000); psychosocial (t = -3.63, p = .001); social relationship (t = -5.12, p = .000), and environmental (t = -2.52, p = .012). Family caregivers had higher quality of life scores than their elderly patients. Differences were greater for elderly female versus elderly male patients (p = .000). When the age of the caregiver was closer to the age of the elderly patient, the difference in quality of life scores narrowed (p = .009). Strengths of the study were the number of family caregiver/elderly patient pairs included and the demonstrated difference in perception of quality of life between subjects. Weakness of the study was the narrow geographical focus of northern Taiwan. Understanding that there is a difference in quality of life perceptions between elderly patients and family caregivers is an important factor in the selection of long-term care services and ratings of quality of life provided by those services. Use of the WHOQOL-BREF instrument in measurement of an elderly population relates to the study of elderly nursing home residents.

Use of Identification Bands and Related Technologies

Failure to correctly identify patients and residents has contributed to errors in studies already mentioned. Correct identification of the "right" patient is one of the "rights" of medication administration that are well-known to nurses. The Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) has identified patient safety and patient identification as critical challenges facing healthcare organizations. It is not uncommon for an identification band to be removed, or to be

difficult to access due to patient position or surgical drapes. All clinicians should be concerned about the proper and correct identification of their patients (Beyea, 2003; Chang, Schyve, Croteau, O'Leary, & Loeb, 2005). A study by Osborne, Blais, and Hayes (1999) found that most nurses believed only 25% of errors were reported and that most errors resulted from not checking identification wristbands or from being tired. Borel and Rascati (1995) observed nurses were identifying patients by room numbers instead of identification bands. Bakken (2006) provided safety information related to barcode technology as a means to reduce error. However, nurse activities included replacing wristband identification with typing in patient identification due to workload during busy periods.

A qualitative study was performed by Eisenhauer, Hurley, and Dolan (2007) in a tertiary hospital in the northwestern U. S. involving: RNs ($N = 40$); age ($M = 35.5$ years); female ($n = 36$); and years of clinical experience ($M = 11.2$ years). Semi-structured interviews were conducted related to medication administration before and after the introduction to a barcode/electronic medication administration record (eMAR). Workarounds was one category that was identified. Nurses bypassed hospital protocols or procedures to expedite getting medications to patients more efficiently. RNs recognized this practice involved taking risks by not following hospital protocols. It was reported that less thinking occurred during the actual medication administration than before or after the patient received his/her medications. Rather than being a technical task, medication administration was found to be a highly complex thinking process that involved the application of knowledge to prevent harm and to promote good outcomes. Participants reported the need for constant vigilance in making sure patients receive the

appropriate medications. Strength of the study was the input from RNs prior to and after

the introduction of a barcode/eMAR system. Weakness is the study was limited to one

tertiary hospital and only to RNs. Relevance to this study is the importance of designing

a safety system that cannot be circumvented by workaround practices.

A retrospective study of nursing student errors by Larding, and Petrick (2008)

involved the review and coding of errors ($N = 77$) over a three year period of time in a

baccalaureate nursing program in British Columbia, Canada. Incidents were reviewed for

classification of errors. Twenty-three of the events involved "rights" violations including

failure to check a patient's identification band. Although a limited study, it adds to the

insight of nursing practice involving medication administration.

There are legal restrictions based on interpretation of resident's rights regulations.

In Illinois, Sec. 2-106a prohibits identification wristlets except as "ordered by a physician

who documented the need for such mandatory identification"

(Illinois P.A. 88-263, 2009). When an identification band is required, it must contain the

resident's name and the facility's name and address. However, a letter issued by the

Division of Survey and Certification, Region VI of the Centers for Medicare and

Medicaid Services (CMS) recognized the need for facilities to properly identify residents

for medication administration. Systems that are currently used include self-identification,

room numbers, name plates outside rooms or on beds, and photos may be adequate, if

they are routinely updated by facilities. Within the quality of care regulations, CMS

would allow an identity wristband if the resident's health and safety would be endangered

should the resident not wear a wristband and if the resident and/or family were involved

in this planning decision. Even if discrete systems were used to identify residents, the

agency would still need to verify that the resident was afforded the opportunity to express his/her preferences and that those preferences were taken into account during the planning process. This does not preclude residents from wearing personal wristbands, bracelets, or other means of personal expression. Facilities would be found in compliance if the resident and family are involved in the comprehensive assessment and care planning process (C. Cline, personal communication, December 2, 2005, CMS Region VI).

Recent activity has been undertaken by the Hospital Associations of multiple states and by the Center for Patient Safety to standardize the color coding of various patient alert bands used to communicate patient information. The movement to standardize color coded identification bands began in the Pennsylvania and New Jersey Hospital Associations following an exemplar case that involved misinterpretation of a band's color. An RN familiar with the color-coding of band in one facility, failed to initiate emergency care in another facility where he also worked as he assumed the meanings were similar between facilities. A survey of 75 New Jersey healthcare facilities discovered the use of ten different colors and 19 different meanings or risk factors (NJHA, 2007). Seventy-eight percent of the hospitals in Pennsylvania reported using patient alert bands with no standardization of color and meaning. Common uses for the bands include: allergy alert, fall risk, do not resuscitate, restricted extremity, latex allergy, similar name, and mother-child match. In Pennsylvania, nine different colors were used to denote 20 different meanings across healthcare organizations. For do not resuscitate status, 19% of hospitals used alert bands and 52% used blue as a dominate color. Red was used for allergy alert 78% of the time, and green was used for fall risk 31% of the

time. Recommendations from the Pennsylvania Hospital Association's safety initiative included limiting the number of bands being used and to standardize their meaning (PAPSRS, 2005).

New Jersey and Pennsylvania's Hospital Associations adopted standardized alert band colors. A consortium, the Western Region Alliance for Patient Safety (WRAPS) began the initiative in five southwestern states, which included Arizona, Colorado, New Mexico, Nevada, and California. The Arizona Hospital and Healthcare Association (AHHA) and the New Mexico Hospitals & Health System Association (NMHHSA) followed suit in 2007 (Arizona Hospital and Healthcare Association, 2007; NMHHSA, 2007). The Kansas Hospital Association (KHA) adopted the Color-coded Wristband Standardization in March 2008 (KHA, 2008), and Missouri is using the implementation toolkit *Banding Together for Patient Safety from the Center for Patient Safety* (Center for Patient Safety, 2009). These states and many others have adopted the following alert band colors and meanings: do not resuscitate (purple); allergy (red); fall risk (yellow); restricted extremity (pink); and latex allergy (green). Along with the color are printed texts on the identification bands or tags. These bands are also prevented from general use in nursing homes due to the regulations imposed by CMS related to resident rights. Exceptions include those for guaranteeing resident safety with resident and family input and choice as mentioned above.

The literature review contained information about new technologies related to patient identification systems. New technologies are bar-coded, digital photo, and radio frequency identification devices (RFID), which include wristbands, jewelry, and card-type systems (Anonymous, 2006; Anonymous, 2008). Hartman (2006) reported the

increased demand for bar code and RFID equipment in American hospitals. Four percent

of hospitals were using RFID for patient and asset tracking. Printers are capable of

imprinting labels at the point of use. RFID chips have been in use in Europe for

identification and transfer of patient information. Patient specific identification numbers,

an online database, and relevant health history are embedded within an implanted chip

that is then scanned by emergency or healthcare personnel. The healthcare market is seen

as an emerging market for this technology, following use for the past 15 years in

livestock and pets. Hospital uses have included tracking of equipment, medication, and

personnel. RFID tags could be used to provide patient identification for medication

administration systems and care alerts, thus reducing the potential for errors

(Wicks et al., 2006). Other uses for this technology have been in the identification of

Hurricane Katrina victims in Mississippi, and the U.S. Department of Defense is

considering replacement of dog tags with RFID chip implants. Concerns raised with this

technology have been threats to human dignity and integrity of the human body. Since

these devices are based on unique identification numbers, they can be used to track

behavior, preferences, and location if within range of any reader device (EMBO, 2006).

Summary of Research

Elders living in America's nursing homes are a vulnerable and frail population

who are at risk of medical errors every day. The concerns from hospitals that prompted

significant news coverage and changes in safety standards did not have the same impact

on nursing homes, even though studies have demonstrated that nursing homes are just as

error prone as other healthcare agencies and providers. Nursing homes are unique in that

unlicensed personnel are approved to administer medications to residents. Medication passes are seen as routine tasks and shortcuts are taken due to familiarity with residents. Standards of nursing practice to ensure the "rights" of medication administration are followed are not consistently practiced in this environment. New residents, residents that have transferred in, and ambulatory residents are at greater risk of error.

Federal and state regulations designed to protect resident rights and human dignity also place residents at risk for medical error. Nursing homes, which are medical and nursing institutions, are expected to create and to maintain a home-like environment for their residents. Identification bands, which are standard issue for hospital-based patients, are not permitted in nursing homes as they may detract from a resident's dignity. However, cognitively impaired residents have wander-guard bracelets or tags applied as part of their plan of care to prevent elopement. Both systems are designed to ensure safety, but a double standard exists between cognitive and cognitive-impaired residents.

Technology is available to resolve concerns related to the old wristband method of patient identification. Radio frequency identification systems are available that can be designed as bands, jewelry, and credit-card type applications. When linked to an automated, computer-based medication system, these devices can transmit patient identification and critical medical information with minimal intrusion.

Residents of nursing homes are typically individuals who are residing there not by choice, but out of necessity. They are unable to provide some if not all of their activities of daily living without assistance, and so they are placed in an environment where few consider it "home." Some individuals exhibit positive adaptive behaviors and try to "make the best of it." Others will have negative adaptive behaviors such as withdrawal,

isolation, and further deterioration of their health. When a person is placed in an

environment, and is provided information and knowledge about the safety of that

environment, positive adaptative behavior should occur to maintain personal safety.   It is

a nurse's role to support that individual through the adaptive process.

CHAPTER III - METHODOLOGY

Using an elderly population for an investigation presented challenges related to access of a protected group, including obtaining consent from nursing homes involved and their residents and/or their families. The regulations affecting nursing homes strictly protect nursing home residents, and the research design had to reflect those regulations, the policies and procedures of the facilities, and the desire of the residents to participate. The resident's age, vision, cognition, and ability to complete the instrument independently were factors considered in resident selection. The methodology chosen reflected the above restrictions and limitations.

Research Design

A non-experimental, correlational design was used. No nursing intervention was done in the research investigation. This was a correlational design (Polit & Beck, 2008), beginning with the conceptual basis of the environmental domain, quality of life, gender differences, and a theoretical base of human adaptation. Relationships between variables were explored based on three research questions. Correlational analysis and Chi-square analysis were used to study the variable relationships and the differences between male and female participants respectively. A structured data collection process was used based on one assessment instrument that has demonstrated reliability and validity in prior studies and additional questions that reflected the research questions. Answers to the research questions provided a better understanding of nursing home residents' perceptions of quality of life and their perceptions of the environmental domain and

 how those perceptions may affect a resident's choice to wear an identification device. The investigation followed a framework for nursing research by Polit and

Beck (2008).

Setting, Type of Subjects, Sample Size, and Sample Selection Process

The setting for this study took place in seven nursing homes located in five rural communities in two Midwest states. All of these facilities were located in communities that have an agricultural economy and an aging population. These homes collectively provided a statistically valid number of subjects required.

Subjects were alert and coherent elderly adults currently living in a nursing home setting, who were able to read and comprehend a survey instrument written in the English language. Assistance from the facilities' nursing or social services personnel was used to identify those residents who had the cognitive functioning required to provide informed consent, to understand and comprehend the instrument questions, and to provide an appropriate response.

The estimate of appropriate sample size was determined by performing a power analysis to prevent type II error. Power was set at .80 with an alpha of .05. The effect size using the World Health Organization Quality of Life –BREF (WHOQOL-BREF) instrument was determined from prior studies to be .56 (Hwang, Liang, Chiu, & Lin, 2003) and .68 (McDermott, Richards, Thomas, Montgomery & Lewith, 2006). Appropriate sample size for the study was determined to be between 44 and 63 based on Table 22.6 (Polit & Beck, 2008). Using the more conservative number, the sample size was determined to be 63 participants.

Protection of Human Subjects

As participants were elderly nursing home residents over age 65 years, approval for the study was obtained from the Nursing Research Ethics Committee (NREC) followed by full review approval from the Fort Hays State University Institutional Review Board (FHSU IRB). Approval was also obtained from the administration of each of the nursing homes participating in the study. None of the nursing homes was affiliated with an agency that has an Institutional Review Board (IRB). Approval was sought by two homes' corporate legal division. A cover letter of introduction and purpose was included with an informed consent document (see Appendix A). The informed consent document followed the guidelines provided by the FHSU IRB (see Appendix C). The cover letter provided information as to the resident's anonymity and confidentiality. The quality of life instrument was designed to be self-administered, but assistance to complete the form was permitted and indicated on the instrument. The resident may have elected to withdraw from the study and may have requested that their information not be used. Results from the study may be shared with individual residents upon their request in aggregate form.

Data Collection Instruments

Quality of life was operationalized by using the World Health Organization's QOL-BREF (WHOWOL-BREF) assessment (see Appendix B). This instrument was developed initially as the WHOQOL-100 assessment with the purpose of establishing an international measure of quality of life. The instrument was developed and tested globally in 15 centers. Each center piloted the assessment with at least 300 respondents.

The WHOQOL-BREF is an adaptation of the WHOQOL-100 with 100 items that were grouped into six domains. Analysis of the 100-item instrument demonstrated the WHOQOL-BREF to be more appropriate with four domains and 26 questions (WHO, 2008). The domains included physical health with seven items, psychological with six items, social relationships with three items, and the environment with eight items. Demographic items from the WHOQOL-BREF instrument included: gender, date of birth, highest education level, marital status, and current illness. Taylor et al. (2004) found the test reliable with a correlation coefficient of .71-.91, and internal consistency was adequate with social relationships being an exception with Cronbachs' alpha (.64 - .87). The WHOQOL-BREF has been found to have excellent reliability and to be valid in additional studies (Hwang et al., 2003; Lin, Wolf, Hwang, Gong, & Chin, 2007; McDermott et al., 2006). Domain questions were scored, with questions 3, 4, and 26 being reverse scored. Results were summed and then converted to a 100 point scale to make the BREF instrument comparable to the WHOQOL-100.

An addendum questionnaire was used to ask specific questions related to safe environment and willingness to wear an identification device. Based on participant responses, these two questions were followed by Likert-type responses to rate environmental safety and willingness to wear an identification device on a 1 – 5 scale. Participants were then asked to provide responses to what is unsafe in their environment and what type of identification device would they be willing to wear.

Data Collection Procedure

The researcher contacted nursing homes in communities in two Midwestern states to introduce the study and to obtain permission to conduct the study. The researcher then

contacted residents, aged 65 years or older, living in those facilities regarding their participation. Instructions with the WHOQOL-BREF assessment required the inclusion of equal numbers of male and female participants. Equal dispersion of age groups was difficult due to the predominate number of aged female persons in the nursing home population compared to the number of aged male residents. Nursing home staff identified those residents with intact cognitive functioning and the ability to self-report for participation in the investigation. From the compiled list of residents, participants giving informed consent were included in the study as a convenience sample. The assessments were provided to the participants by the researcher. If assistance was needed, a family member or disinterested third party was asked to assist the participant by reading or marking the instrument. Data collection continued until an adequate sample had been obtained from various nursing homes.

Data Analysis

Descriptive statistics were calculated including mean, standard deviation, and range for demographic information obtained. Aggregate comments were included to provide additional meaning to the data presented. Inferential statistics were used to analyze data from the WHOQOL-BREF and addendum questions to answer the research questions. The Statistical Package for the Social Sciences (SPSS) 15.0 – Graduate Package statistical software program was used to perform statistical analysis.

Research question #1: What is the relationship, if any, between a nursing home resident's quality of life based on the quality of life profile in four domains from the WHOQOL-BREF instrument and willingness to wear an identification device based on a the rating scale question #4 from the Addendum Questionnaire. The independent

variable is quality of life and is based on the summative scores in four domains from the

WHOQOL-BREF instrument. The dependent variable is the willingness to wear an

identification device, which is an interval measurement. The design is to determine if a

resident's perception quality of life will affect his/her willingness to wear an

identification device. In non-experimental studies, the dependent variable is sometimes

referred to as the criterion variable. The appropriate statistical analysis for this question is

Spearman's rho correlation. The relationship between the two variables is being

compared (Polit & Hungler, 1999).

Research question #2: What is the relationship, if any, between a nursing home

resident's perceptions of their environmental domain based on the WHOQOL-BREF

instrument and his/her willingness to wear an identification device based on Addendum

Questionnaire #4? The independent variable is the resident's perception of his/her

environmental domain, which is a summative score from the various environmental

facets. The dependent variable is the resident's willingness or not to wear an

identification device, which is an interval level of measurement. The resident's perceived

environment may have an effect on his/her willingness to wear an identification device.

Spearman's rho would also be appropriate for this research question for determining

whether or not there is a relationship between the two variables (Polit & Hungler, 1999).

Research question #3: What are the differences, if any, between gender of nursing

home residents and the willingness to wear an identification device? The independent

variable is the resident's gender, question #3, which is nominal level of measurement.

The dependent variable is the resident's willingness or not to wear an identification

device, which is nominal. The appropriate statistical test is a Chi-square analysis as the

IV is nominal and the DV is nominal. The two groups, male and female, are being

compared with their willingness to wear an identification device. It also requires that

independent, random sampling is used (Polit & Hungler, 1999).

The WHOQOL-BREF User's Manual provides instructions for coding the data to

allow grouping into the four domains. Two items can be scored separately: question #1

asks about an individuals' overall perception of quality of life and question #2 asks about

an individual's overall perception of their health (WHO, 1998).

Conclusion

This chapter has presented the research design, selection of nursing home resident

participants, protection of human subjects, data collection procedures, and WHOQOL-

BREF instrument. Data analysis, level of variables, and statistical methods were also

presented.

CHAPTER IV – FINDINGS

This investigation examined the relationships between nursing home residents' willingness to wear an identification device and variables involving the residents' perceptions of quality of life and their environmental domain. It also examined the difference between male and female residents' willingness to wear an identification device.

This chapter presents the findings of the data that were collected and analyzed from seven nursing homes in two Midwestern states. Seventeen nursing homes had been contacted, but only seven nursing homes agreed to provide researcher access to their residents. The data were collected from nursing home resident responses to the World Health Organization Quality of Life – BREF (WHOQOL-BREF) instrument. Residents provided informed consent to participate, and an identification number was assigned to the instruments to insure confidentiality of their responses. A disinterested third person provided assistance for those residents requiring assistance with reading the questions or marking their answers. Data were entered into the Statistical Package for the Social Sciences – 15 (SPSS-15, 2007) for analysis. The level of significance for this investigation was set at .05.

Demographic Data

This investigation involved meeting with nursing home residents, who had been identified by nursing home personnel as meeting the participant criteria. Of those

identified, three were excluded due to age being less than 65 years. The remaining

residents ($N = 53$) met all the participation requirements and provided informed consent

(see Table 1).

Table 1

Demographic Characteristics of Sample ($N = 53$)

Variable	Characteristic	n	%
Gender	Male	13	24.5
	Female	40	75.5
Grade Level	None at all	1	1.9
	Primary School	7	13.2
	Secondary School	26	49.1
	College/University	19	35.8
Marital Status	Single	5	9.4
	Married	11	20.8
	Divorced	3	5.7
	Widowed	34	64.2

The demographic data analyzed for gender, grade level achieved, and marital status are summarized in Table 1 ($N = 53$). The majority of the sample were female ($n = 40$, 75.5%), which was not surprising based on the known population of nursing homes being predominately female. An equal pairing of male and female was not possible as a result. The majority of the sample had attended secondary school ($n = 26$, 49.1%) and several had also attended college ($n = 19$, 35.8%). All but one of the communities visited had a two or four-year college or university in the community. Only one individual (1.9%) had not attended any schooling. The remainder ($n = 7$, 13.2%) had attended some primary schooling through 8th grade. The majority of residents ($n = 34$, 64.2%) were widowed, which was expected based on the age of sample. Married individuals ($n = 11$, 20.8%) reported their spouse either visited regularly except for one because of the spouse's own poor health.

The age of the sample ranged from 66 years to 98 years ($M = 85.6$ years, $SD = 7.42$). Many residents verbalized with pride how old they were. Several also shared that they had or would be experiencing a birthday. The youngest participant (66 years) lived with her mother (88 years) due to rheumatoid arthritis and inability to care for herself. The oldest resident (98 years) was looking forward to being 100 years old.

When asked if the resident was ill, 39.6% ($n = 21$) reported they were not ill; 18.9% ($n = 10$) complained of arthritis; 7.5% ($n = 4$) had heart disease; 5.7% ($n = 3$) suffered from hip fractures that caused their admission; 3.8% ($n = 2$) were reported for each of stroke, dizziness, and "can't walk"; and 1.9% ($n = 1$) was reported for each of cancer, Parkinson's Disease, cold/flu, lung disease, diabetes, overweight, constipation, falling, and infantile paralysis.

Findings of Research Questions

Three questions guided this investigation. Each question will be addressed

individually and discussed.

Research Question Number One

Research question number one was, "What is the relationship, if any, between a

nursing home resident's quality of life and his/her willingness to wear an identification

device?" The variable data were obtained from question one, the adjusted domain scores

from the WHOQOL-BREF instrument, and from question four of the addendum

questionnaire (see Appendix B).

Spearman's *rho* was used to determine relationship between the variables. The

residents' reported level of quality of life, question one, ($M = 3.79$, $SD = 1.10$) and the

residents' level of willingness to wear an identification device ($M = 4.08$, $SD = 1.43$) on a

scale of $1 - 5$ were analyzed (see Table 2). An insignificant, inverse correlation was

found, and it was not significant, $r_s(51) = -.058$, $p > .05$. Reported quality of life was not

related to the residents' willingness to wear an identification device.

Spearman's *rho* was also used to determine relationship between the quality of

life adjusted domain scores and the residents' willingness to wear an identification

device ($M = 4.08$). The three domains are physiological ($M = 59.60$, $SD = 18.58$),

psychological ($M = 71.77$, $SD = 17.80$), and social ($M = 74.25$, $SD = 16.65$) (see Table 2).

The environmental domain is presented with research question number two. No

significant correlation was found, and none were significant with each of the three

domains: physiological, $r_s(51) = .128$, $p > .05$; psychological, $r_s(51) = .097$, $p > .05$; and

social, $r_s(51) = .121$, $p > .05$. None of these quality of life domains were related to the resident's willingness to wear an identification device.

<div align="center">*Research Question Number Two*</div>

Research question number two was, "What is the relationship, if any, between a nursing home resident's perception of the environmental domain and his/her willingness to wear an identification device?" This investigation included the adjusted score for environmental domain ($M = 81.68$, $SD = 12.50$) from the WHOQOL-BREF instrument and question four from the addendum questionnaire ($M = 4.08$, $SD = 1.43$).

A Spearman's *rho* correlation coefficient was calculated for the relationship between these variables (see Table 2). An insignificant correlation was found, and it was not significant, $r_s(51) = .165$, $p > .05$. The environmental domain was not significantly related to the residents' willingness to wear an identification device.

<div align="center">*Research Question Number Three*</div>

Research question number three was, "What are the differences, if any, between gender of nursing home residents and the willingness to wear an identification device?" The variables of gender and question three from the addendum questionnaire are both nominal.

A chi-square test of independence was calculated comparing the variables. No significant difference was found, $X^2(1) = .331$, $p > .05$. Willingness to wear an identification device appears to be independent of gender.

Table 2

Correlation of Multiple Variables and Rating of Willingness to Wear an I.D.

Variable	*M*	*SD*	*n*	r_s	*p*
Rate QOL	3.79	1.10	53	-.058	.679
Physiological	59.60	18.58	53	.128	.362
Psychological	71.77	17.80	53	.097	.489
Social	74.25	16.65	53	.121	.368
Environmental	81.68	12.50	53	.165	.236

Miscellaneous Findings

From the addendum questionnaire, residents were asked if they considered their environment to be unsafe. Only three residents (5.7%) indicated they believed their environment to be unsafe. The responses to what was unsafe included: fear of falling (*n* = 1); fear of one individual staff member (*n* = 1); and fear of another resident (*n* = 1). None of the residents mentioned fear of a medical/medication error being made. From the WHOQOL-BREF instrument's question number 8, "How safe do you feel in your daily life," residents responded favorably (*M* = 4.36, *SD* = .84) on a scale of 1 – 5. Residents overall responded feeling safe in their environment.

Of those residents indicating they would be willing to wear an identification device (n = 52, 98.1%), the majority (n = 31, 58.5%) indicated they would be very willing to wear an identification device (see Figure 2).
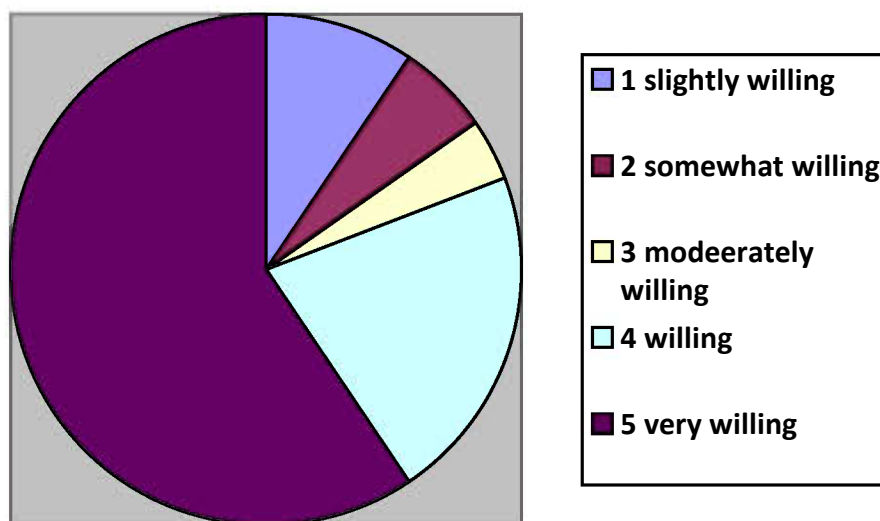
Figure 2. Residents' Willingness to Wear an Identification Device

When asked what type of device the resident would prefer to wear, residents who were willing to wear an identification device indicated the following preference: hospital type (n = 7, 13.2%), jewelry type (n = 35, 66%); and electronic transmitter type (n = 9, 17%). One resident could not decide. Of those who selected the transmitter type, several indicated they had used a necklace device to call for help when they lived alone prior to admission to the nursing home.

Summary

This chapter has presented the data collected and the analysis of data to answer this investigation's research questions. Miscellaneous findings from the investigation were also presented.

CHAPTER V – SUMMARY AND CONCLUSIONS

This chapter provides a summary of the investigation and a comparison of the research questions' findings with the literature. Limitations will be presented and recommendations will be made for future nursing research, nursing practice, nursing theory, and nursing education.

Summary of the Investigation

This investigation studied the quality of life and environmental perceptions of male and female nursing home residents to determine if a correlation existed between these variables and the residents' willingness to wear an identification device. The investigation took place in seven nursing homes in rural communities of two Midwestern states. Participants were over 65 years-of-age, were determined by nursing home personnel to have intact mental functioning, and were residents of the nursing home for six months or longer. Approval to contact residents was obtained from the administrator of each of the nursing homes, and informed consent was obtained from each participant. Approximately 10% of the nursing homes' populations met the above criteria, providing a sample size of 53 participants.

Interpretation of the Findings

The interpretation of this investigation's findings will be presented in this section with comparison to those found in the literature. International studies were used for comparison based on their use of the WHOQOL-BREF instrument. Nursing home studies in the U.S. using residents as subjects are rare. Instead, published

U.S. studies utilized nursing home staff, family members, or data collected from state inspection surveys. This made direct comparison of this investigation to other U.S. studies difficult.

First Research Question

The first research question was, "What is the relationship, if any, between a nursing home resident's quality of life and his/her willingness to wear an identification device?" From this investigation, there was an inverse, non-significant finding. An individual may be more inclined to wear an identification device as their physiologic and other quality of life domains lessen. The prohibition of the use of identification devices in nursing homes is based on the belief that the use of these devices detracts from a resident's quality of life and human dignity. This investigation sought to determine if a relationship existed. However, the residents' perception of quality of life had no significant correlation with their willingness to wear an identification device. Except for one individual, all the residents were willing to wear an identification device. International studies were located using the WHOQOL-BREF instrument to assess the quality of life of the elderly. A quality of life study involving elderly living in rural Turkey ($N = 1301$) by Arslantas, Unsal, Metintas, Koc, and Arslantas (2007) included a group of participants aged 80+ years. Although the published study did not involve elderly in residential care homes, the participants were similar with multiple morbidities, dependent and independent individuals, and age distribution. Quality of life was reported as lower in the Turkish study ($M = 2.96$, $SD = .86$), which could reflect differences in health, living conditions, finances, resources, and social facets between the U.S. and Turkey. To compare the domain scores, the Turkish study's scores were converted to the

100-point scale used in this study, which showed the following domain scores: physiological ($M = 50$), psychological ($M = 81$), and social ($M = 56$). Psychological scores were higher than physiological scores in both the Turkish study and this investigation. Based on the average age of the subjects, one would expect more chronic illnesses and morbidities to be prevalent in a population of elderly persons. Social scores were much higher in this study than the Turkish study. This domain is based on relationships, support from friends, and satisfaction with one's sex life. Residents in this study were satisfied with family and friends visiting. Living in a nursing home provides our elders with multiple points of social contact that may be missing among the Turkish elderly.

A study from Croatia ($N = 60$) by Brajkovic, Godan, and Godan (2009) compared the quality of life domains between elderly ($M = 81$ years) stroke persons living in a nursing home to those living at home. The domain scores were higher for nursing home residents. Published domain scores were adjusted to the 100-point scale used in this study and showed the following: physiological ($M = 75$), psychological ($M = 69$), and social ($M = 69$). The nursing home residents in the Croatian study had higher physiological scores than this study. This could be due to the fact that the acuity level of the elderly living in U.S. nursing homes is now quite high. Many of this country's elderly, who are even somewhat independent, now reside in assisted living complexes rather than being placed in nursing homes. This has resulted in America's nursing homes caring for the very infirm and those with dementia. The psychological and social domains were more similar to this study.

Second Research Question

The second research question was, "What is the relationship, if any, between a nursing home resident's perception of the environmental domain and his/her willingness to wear an identification device?" This investigation found no significant relationship. The Turkish study by Arslantas et al. (2007) mentioned earlier had an adjusted environmental domain ($M = 56$), and the Croatian study by Brajkovic et al. (2009) had an environmental domain ($M = 75$). This study's environmental domain ($M = 81.68$) was higher than the two studies and most similar to the Croatian study that involved residents in nursing homes. This investigation and the Croatian study both involved residents in a nursing care facility. Environmental concerns are more likely to be addressed in a care facility due to governmental controls rather than at an individual's residence. Residents in this study were very positive about their safety, the conditions of their living space, and services available to them from staff or family members. Even though one home had experienced an electrical fire, residents felt safe because staff responded quickly and appropriately to the emergency. Others reported similar feelings when their facilities responded to tornado warnings. Having nursing and support staff immediately available was comforting to residents and contributed to them feeling safe and secure in their environment.

Third Research Question

This research question asked, "What are the differences, if any, between gender of nursing home residents and their willingness to wear an identification device?" A chi-square of independence was calculated to compare the variables. No significant

difference was found between the variables. In the Arslantas et al. (2007) study, males

scored higher than females on quality of life and health questions and in all four domains.

This may be due to the societal role of females in Turkish culture. Results were

significant except for the social domain ($t =.77, p >.5$). A study conducted by

Hawthorne, Herrman, and Murphy (2006) provided population norms based on residents

in Victoria, Australia   ($N = 396$). Their study found males ($n = 46$) and females ($n =$

84) in the 80+ years age group scored similarly in three domains: physiological - males

($M = 66.9, SD = 18.8$) and females ($M = 66.9, SD = 17.3$); psychological – males ($M =$

67.5, $SD = 14.9$) and females ($M = 68.5, SD = 11.5$); and environmental – males ($M =$

73, $SD = 15$) and females ($M = 75, SD = 13.7$). The exception was in the social domain

with males scoring lower ($M = 66.3, SD = 19.8$) than females ($M = 73.4, SD = 15.5$).

Males tend to have fewer social contacts and are less likely to develop and nurture long-

term relationships. Male friends are more likely to have passed away by the time a male

reaches this age group.

<div align="center">Limitations</div>

The most significant limitation of this study was the ability to gain access to the

nursing home population. Seventeen nursing home administrators were initially

contacted to gain access to their home's residents. Three of these homes were owned by

corporations and indicated they would have to contact their corporation's legal division.

Only one of these three homes participated in the study. Follow-up was made to the

other administrators through phone calls, voice-mail, attempted visits, and e-mail. One

administrator finally gave a "no" answer, and the remainder never responded after eight

weeks of trying to contact them. Eventually, seven nursing homes participated. This limited the sample size.

The World Health Organization sought equal groups of males and females in their instructions to use the WHOQOL-BREF instrument. Due to the predominance of females in the nursing home population, it was not possible to have an equal number of male and female participants.

The investigation focused on residents who had resided in the nursing home for six months or longer. In the homes visited, a number of residents were there for rehabilitation prior to going home. Rehabilitation requires shorter stays, and this group of residents was not included in the investigation. This group would also have been alert and mentally able to respond to the questions appropriately.

The questionnaire was presented in 14-font, but many residents requested that the instrument be read to them and marked. A disinterested, adult volunteer accompanied the researcher to read the exam and mark responses for those residents. Residents provided verbal responses, and the volunteer marked the instrument. No family members were present during any of the resident interactions. This format may have affected the residents' choice of responses.

All but one resident reported that they would be willing to wear an identification device. This 98% response may be due to the generational characteristics of this population. Individuals in this age group belong to either the GI generation (born between 1901 and 1924) or the silent generation (born between 1925 and 1942). Strauss and Howe (1991) described general characteristics of these generations who grew up during world wars and the great depression. They are patriotic and loyal, conformist, and

are overall trusting of the government. These subconscious traits may have contributed to the participants' willingness to do what is asked of them without thought to themselves.

<div align="center">Recommendations</div>

This investigation provided some insight into the perceptions of nursing home residents related to quality of life and their environment. However, no significant correlation was found between these variables and the residents' willingness to wear an identification device. None of the residents reported they were fearful of medical/medication error. In light of the number of errors that have been reported in the literature, it was surprising that none of the residents reported a concern. Many stated that they took "a handful of pills" every day. Three residents reported they experienced being fearful. One resident reported a fear of falling. Due to fall prevention programs, many of the residents had grab bars, low beds, and assistive devices. Others reported they had to call for assistance before getting up from the chair or bed. Two residents reported fear of specific individuals; one being another wandering resident and the other being a staff member. Both residents expressed fear based on their perception that they may come to harm. They had not experienced harm prior to this, but had voiced concerns regarding how these individuals looked and acted. Based on these findings, the following recommendations for research, practice, nursing theory, and education are provided.

<div align="center">*Nursing Research*</div>

The following recommendations are made based on this investigation:

1. Investigate how and when nursing homes communicate medical/medication errors to their residents.

2. Explore means to enhance access to nursing home residents without being intrusive. Much of the published research in the United States involves perceptions of staff or residents' families rather than the residents. Cognitively intact residents should be able to speak for themselves.

3. Consider expanding this investigation to family members and guardians for residents whose mental functioning is not intact.

4. Investigate nursing home survey processes to determine if quality of life criteria can be included in the resident interview.

5. Compare nursing home medication error rates with the residents' perception of safety.

6. Evaluate various means of resident identification and their effectiveness in identifying the resident correctly.

Nursing Practice

This investigation involves nursing practice as it relates to the care of aged persons in a nursing home setting. Concepts of safety, competence, adaptation, quality of life, and environment are all linked to the Code of Ethics for Nurses (ANA, 2001). The first code stresses the dignity, worth, and uniqueness of individuals when planning care. A nurse should determine if a decision to wear an identification device would have a negative impact on a nursing home resident's sense of dignity. This can be determined by knowing the resident and exploring his/her value system. The second code relates to a nurse's commitment to a patient, who is the recipient of the care being provided. Nursing care in the long-term care setting requires collaboration with the resident and his/her family, physicians, pharmacists, the administrator, and other staff. In this process a nurse

advocates on behalf of the resident. The third code stresses the protection of health, safety, and the rights of patients. One focus of this investigation was on enhancing residents' safety through correct identification while maintaining their quality of life. Another component within this code is the RN's exposure of unsafe practice and the commitment to competent practice. Nursing should explore methods that would help to insure correct identification of residents. The fourth code involves responsibility and accountability of a nurse for his/her practice and the appropriate delegation of nursing tasks. In the nursing home setting, a registered nurse (RN) delegates the task of medication administration to licensed practical nurses and certified medication aides. The RN must supervise and evaluate their performance to ensure medications are being passed correctly. A key component would be the determination of correct resident identification during each medication pass. The fifth code involves a nurse's commitment to professional growth and competence. An RN in the nursing home setting needs to remain knowledgeable and skilled in geriatric nursing and to incorporate evidenced-based practice into the care setting. Participating in research and adopting research findings will facilitate professional practice. The sixth code involves an RN's role in creating a therapeutic environment, which was another focus of this investigation. A nurse must share information with residents in order for them to make an informed decision. This could include error rates, a review of their medication regimen, and appropriate questions to ask if there is ever a doubt about their medications or treatments. Within the ninth code is a nurse's role in creating social change. Nursing should have a voice in the highly-regulated nursing home industry. Nursing homes, as a principle site for the delivery of nursing care to the elderly, should be including nurses in policy and procedure

development. Nurses should be aware of residents' perceptions of quality of life, safety, and their environment. Nurses should be politically active as statutes, rules, and regulations are being developed. As advocates, nurses must be a voice of concern for those entrusted to their care. Safety concerns, which include accurate medication administration, need to be addressed for this population group.

Nursing Theory

This investigation was based on Roy's Adaptation Model (2008). The model worked well with this investigation as it examined the nursing home residents' perceptions of their environment and their behavior within that environment. A nurse's role is to facilitate a resident's adaptation to the environment. In this case, the environment is the nursing home, which is an institutional setting that is trying to simulate a home-like environment. Within Roy's model, the individual is an adaptive system who uses awareness and choice to create integration between themselves and their environment. When a resident is made aware of safety concerns or rationale for wearing an identification device, an informed choice can be made to wear or not to wear one. A nurse promotes adaptation by providing a resident with the knowledge and information he/she needs to make an informed choice. A nurse should also notify a resident and the family when an error is made. With cognitive decline that accompanies aging, a nurse in this setting should also work with the resident, family, and/or guardian to provide ongoing teaching about the resident's medications, drug interactions, possible signs and symptoms of toxicity, and when and how they should voice concerns thereby promoting adaptation within this care setting. Many residents indicated they "took a handful" of pills, but they could not elaborate on all the medications they were taking.

The concepts of environment, safety, health, dignity, and fear were addressed in this investigation. Measurements were obtained from the WHOQOL-BREF instrument and the addendum questionnaire. These concepts provide stimuli to initiate adaptation. Residents felt safe as a result of the staff responding appropriately to emergency conditions such as an electrical fire or tornado warning. Declining mobility and risk of falling were addressed through adaptive equipment and changes in the environment to promote safety. Self-concept and role function were also measured through the four domains within the quality of life instrument. Participants in this investigation exhibited integrated adaptation as demonstrated by high scores in the environmental, psychological, and social domain scores. The physiological domain score was lower, but not unexpected, due to the age of participants and presence of multiple morbidities. Even in this domain, several participants indicated that they "were better off than others in here."

Nursing Education

Nursing educators need to be aware of the special and unique needs of geriatric residents of nursing homes. Care concerns and issues cannot be generalized from the general population to this specific population group. Rather than seeing residents as individual clients, the tendency is to lump them into a group of aged persons who cannot think or speak for themselves. Many of the participants thanked the researcher for spending time with them to find out what they had to say and to have them participate in the study. Educators must be able to instill in their students the value of individuals within this population group, and to use the nursing process to provide care that is appropriate for each nursing home resident. Geriatric care needs to be emphasized in the nursing curriculum.

The nursing home industry in the U.S. is highly regulated. Regulations cover patient rights, environment of care, documentation, and multiple other areas. An understanding of the regulations and the rationale behind them will enhance the educator's ability to prepare nursing students for practice in the nursing home setting and to advocate for social change.

Finally, nursing educators must impart to their students the role of the RN in facilitation of positive adaptive responses of their clients to the environment. This could include changing of the environment or developing successful ways to interact within the existing environment. An individual's placement into a nursing home setting is a significant, life-changing event. An RN working in the nursing home setting must focus not only on the disease process, but also on the resident making a successful transition into this complex environment.

Summary

This investigation sought to determine if there were correlations between perceptions of nursing home residents' quality of life, gender, and environmental domain and their willingness to wear an identification device. Although no correlations were found, all but one resident indicated that he/she would be willing to wear an identification device. There are increasing concerns in the United States focusing on a nursing home resident's quality of life and creating a home-like environment. The use of identification devices in nursing homes is frowned upon. In light of medical errors and safety concerns, perhaps our nation's nursing home regulators should simply stop and ask residents what they would like or be willing to do to produce a safer environment in which to live.

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Appendix A

Cover Letter to Participants

Letter of Introduction to Administrator

Cover Letter to Participants

[Date]

Dear [Name]

I am inviting you to participate in a research project to study perceptions of nursing home residents' quality of life and perceptions of a safe environment. This study is being done as part of the requirements for the Master of Science in Nursing degree from Fort Hays State University in Hays, Kansas. Along with this letter is an informed consent form that provides you with information about the study.

The purpose of the project is to gain knowledge about nursing home residents. Through your participation, I hope to understand how you perceive your environment and quality of life. It is hoped that the results of the survey will be useful for other nursing home residents and caregivers in the future.

The risks are minimal if you decide to participate in this survey. Your responses will not be identified with you personally.

The survey should take you less than 60 minutes to complete. I hope you will take the time to participate. Your participation is voluntary, and there is no penalty if you do not participate.

If you have any questions about completing the questionnaire or about being in this study, you may contact me or Dr. Liane Connelly. The Institutional Review Board (IRB) at Fort Hays State University has approved this study.

Sincerely,

William L. Rhoads, RN
Graduate Student
Fort Hays State University
417-667-5469

Dr. Liane Connelly
Chair, Nursing Department
Fort Hays State University
785-628-4498

[Date]

[Administrator Name]
[Nursing Home/Facility]
[Street Address]
[City, State, Zip Code]

Dear [Administrator Name],

My name is William Rhoads, and I am a graduate student at Fort Hays State University. As part of the requirements for a Master of Science in Nursing Administration degree, I am doing a research study involving nursing home residents. This letter is to serve as an introduction to myself and my study. I will be following this initial contact with a request to meet with you in person and to secure your approval.

This research is looking for relationships between nursing home residents' perception of their quality of life, their perception of the environmental domain, and their willingness to wear an identification device. The participants will need to be age 65 years or older, to be cognitively alert, to be able to self report, and they need to have lived in the nursing home for a minimum of six months. Individuals will sign an informed consent prior to being asked to complete a survey instrument from the World Health Organization. The instrument contains 26 items, and there is a five question addendum. The time involved should be less than one hour for the resident.

I would ask that your facility assist my research study in two ways. First I would ask that you grant me approval to have access to your residents, and second that your facility provide me a list of residents who meet the study's participant requirements. Residents will then be randomly selected from this list. Yours is one of five nursing homes in the Midwest being asked to participate.

This research is being conducted in accordance with the guidelines and approval of the FHSU Institutional Review Board and the Nursing Research Ethics Committee. Dr. Liane Connelly is my faculty advisor. If your facility also has an IRB or other approval mechanism, I will be happy to seek their approval as well.

I am looking forward to visiting with you about this study.

Sincerely,

William L. Rhoads, RN, BSN, MAOM
Graduate Student FHSU
12617 E. Osage Nation Rd
Nevada, Missouri 64772
417-667-5469

Appendix B

World Health Organization Quality of Life Short Form (WHOQOL-BREF)

Addendum Questions

World Health Organization Quality of Life Short Form (WHOQOL-BREF)

About You   I.D. Number _____

Before you begin, we would like to ask you to answer a few general questions about

yourself by circling the correct answer or by filling in the space provided.

What is your **gender**?   Male   Female

What is your **date of birth**?   _____/_____/_____
                                         Day / Month/   Year

What is the highest **education** you received?   None at all

                                                       Primary School

                                                       Secondary School

                                                       Tertiary (College or University)

What is your **marital status**?   Single   Separated

                                            Married   Divorced

                                            Living as Married   Widowed

Are you currently **ill**?   Yes   No

If something is wrong with your health, what do you think it is?

_____

Instructions

This assessment asks how you feel about your quality of life, health, or other areas of

your life. Please answer all the questions. If you are unsure about which response to

give to a question, please choose the one that appears most appropriate. This can often be

your first response.

Please keep in mind your standards, hopes, pleasures, and concerns. We ask that you

think about your life in the last two weeks. For example, thinking about the last two

weeks, a question might ask:

	Do you get the kind of support from others that you need?	Not at all 1	Not much 2	Moderately 3	A great deal 4	Completely 5

You should circle the number that fits how much support you got from others over the

last two weeks. So you would circle the number 4, if you got a great deal of support from

others, as follows.

	Do you get the kind of support from others that you need?	Not at all 1	Not much 2	Moderately 3	A great deal (4)	Completely 5

You would circle the number 1 if you did not get any of the support that you needed from

others in the last two weeks.

Please read each question, assess your feelings, and circle the number on the scale for

each question that gives the best answer for you.

The WHOQOL-BREF

		Very Poor	Poor	Neither poor nor good	Good	Very good
1	How would you rate your quality of life?	1	2	3	4	5

		Very Dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about **how much** you have experienced certain things in the last two weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3	To what extent do you feel that (physical) pain prevents you from doing what you need to do?	1	2	3	4	5
4	How much do you need any medical treatment to function in your daily life?	1	2	3	4	5
5	How much do you enjoy life?	1	2	3	4	5
6	To what extent do you feel your life to be meaningful	1	2	3	4	5
		Not at all	A little	A moderate amount	Very much	Extremely
7	How well are you able to concentrate?	1	2	3	4	5
8	How safe do you feel in your daily life?	1	2	3	4	5
9	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about **how completely** you experienced or were able to do certain things in the last two weeks.

		Not at all	A little	Moderately	Mostly	Completely
10	Do you have enough energy for everyday life?	1	2	3	4	5
11	Are you able to accept your bodily appearance?	1	2	3	4	5
12	Have you enough money to meet your needs?	1	2	3	4	5
13	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5
		Very poor	Poor	Neither poor nor good	Good	Very good
15	How well do you get around?	1	2	3	4	5

The following questions ask you to say how **good or satisfied** you have felt about various aspects of your life over the last two weeks.

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16	How satisfied are you with your sleep?	1	2	3	4	5
17	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18	How satisfied are you with your capacity for work?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
19	How satisfied are you with yourself?	1	2	3	4	5
20	How satisfied are you with your personal relationships?	1	2	3	4	5
21	How satisfied are you with your sex life?	1	2	3	4	5
22	How satisfied are you with the support you get from friends?	1	2	3	4	5
23	How satisfied are you with the conditions of your living space?	1	2	3	4	5
24	How satisfied are you with your access to health services?	1	2	3	4	5
25	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to **how often** you have felt or experienced certain things in

the last two weeks.

		Never	Seldom	Quite Often	Very Often	Always
26	How much do you have negative feelings such as blue mood, despair, anxiety, depression?	1	2	3	4	5

Did someone help you fill out this form?

………………………………………………

How long did it take you to fill out this form?
………………………………………………

WHO (1998)

WHOQOL-BREF Domains	Facets incorporated within domains
1. Physical health	Activities of daily living Dependence on medicinal substances and medical aids Energy and fatigue Mobility Pain and discomfort Sleep and rest Work capacity
2. Psychological	Bodily image and appearance Negative feelings Positive feelings Self-esteem Spirituality/Religion/Personal beliefs Thinking, learning, memory and concentration
3. Social relationships	Personal relationships Social support Sexual activity
4. Environment	Financial resources Freedom, physical safety, and security Health and social care: accessibility and quality Home environment Opportunities for acquiring new information and skills Participation in and opportunities for recreation/leisure activities Physical environment (pollution/noise/traffic/climate) Transport

WHO (1998)

Addendum Questionnaire

Please complete the following questions by circling the correct answer or by filling in the space provided.

1. Do you consider your environment to be unsafe?   Yes   No

2. What makes your environment unsafe?

   _____

3. Are you willing to wear an identification device?   Yes   No

4. If yes, please rate your willingness to wear an identification device on a scale of 1 to 5, with 1 being slightly willing and 5 being very willing. Please circle.

   1   2   3   4   5

5. What type of identification device would you be willing to wear? Please circle.

   Plastic "hospital type"   Jewelry type   Electronic transmitter type

Appendix C

Consent to Participate in a Research Study

Consent to Participate in a Research Study

Fort Hays State University

Adult Geriatric Participants

Title of Study: Relationships between Nursing Home Residents' Perception of Quality of Life, Perception of a Safe Environment, and the Use of Identification Devices

Principle Investigator: William L. Rhoads, RN
                           12617 E. Osage Nation Rd.
                           Nevada, Missouri 64772
                           417-667-5469

Fort Hays State University: Department of Nursing

Faculty Advisor: Liane Connelly, RN, PhD
                           Stroup Hall 129
                           600 Park Street
                           Hays, Kansas 67601-4099
                           785-628-4498

General Information

You are being asked to voluntarily take part in a research study. You may refuse to join, or you may withdraw your consent to be in the study, for any reason, and at any time without consequences.

This study is designed to obtain new knowledge about nursing home residents and their perceptions related to quality of life and their perceptions about the safety of their environment. This information could help other nursing home residents in the future, and you may not receive any benefit from the study. There are potential risks with any study, but it is believed these risks are minimal.

The study description follows. It is important for you to understand the information, so you can make an informed choice about participating in this research study.

You will be given a copy of this consent form. You should ask the researcher any questions you have about this study at any time.

What is the purpose?

The purpose of this research study is to learn about how nursing home residents perceive their quality of life and the safety of their environment. You will also be asked if you would be willing to wear an identification device, which is not typically done in the nursing home setting. The study will then determine if there are any relationships between your responses.

You are being asked to be in the study because you are over the age of 65 years, are alert mentally, and are a resident of a nursing home in southeast Kansas or southwest Missouri.

How many people will take part?

If you decide to be in this study, you will be one of approximately 126 people in the study.

How long will the study last?

Your involvement will require you to complete one survey instrument. The total time required to complete the survey should be less than one hour.

What will happen in the study?

Nursing home staff will help to identify those individuals who are mentally alert, aged 65 years or older, and have the ability to complete the survey form. You will be randomly chosen from the list of residents provided by the staff of your nursing home. If chosen to participate, you will sign an informed consent document and will then be given one survey form to complete.

What are the possible benefits?

Research is designed to benefit society by gaining new knowledge. You may not benefit personally from being involved in this research study.

What are the possible risks?

There may be uncommon or previously unknown risks. You should report any problems to the researcher.

How will your privacy be protected?

You will remain anonymous and will be identified only through a number known to the researcher. Nursing home staff will not be provided with any answers given on the survey.

Participants will not be identified in any report or publication about this study. Although every effort will be made to keep research records private, there may be times when federal or state law requires the disclosure of such records, including personal information. Data from the World Health Organization survey instrument will be provided to them in return for allowing the use of their survey tool. In some cases, your information in this research study could be reviewed by representatives of the University for quality control or safety. The study has been reviewed by the Fort Hays State University's Institutional Review Board (IRB) prior to the study beginning.

Will you receive anything for being in this study?

You will not receive any monetary benefits for taking part in this study.

Will it cost you anything?

There will be no costs for being in the study.

What if you have questions about this study?

You have the right to ask, and have answered, any questions you may have about this research. If you have questions, or concerns, you should contact the researchers listed on the first page of this form.

What if you have questions?

All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject, you may contact, anonymously if you wish, the IRB at Fort Hays State University.

Participants Agreement:

I have read the information provided above. I have asked all the questions I have at this time. I voluntarily agree to participate in this research study.

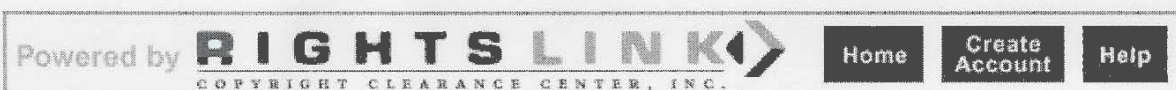_____   _____
Signature of Research Participant   Date

_____
Printed Name of Research Participant

Appendix D

Copyright Permission

Author Permission

World Health Organization Approvals

Powered by **RIGHTSLINK** COPYRIGHT CLEARANCE CENTER, INC.

Home   Create Account   Help

SAGE

Title:	Using the Roy Adaptation Model: A Program of Research in a Military Nursing Research Service
Author:	Linda H. Yoder
Publication:	Nursing Science Quarterly
Publisher:	Sage Publications
Date:	Oct 1, 2005

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BACK   CLOSE WINDOW

Bill Rhoads
_____

From: Linda Yoder [lyoder@mail.nur.utexas.edu]
Sent: Monday, March 02, 2009 2:17 PM
To: Bill Rhoads
Subject: Re: Permission to use

Bill,

Certainly you have my permission to use the model for your work. I would just like to
receive a copy of your model with the explanation to see how you are using it in admin--this
will be another wonderful example I can use with my students.

Best wishes for your success,

Linda
Linda H. Yoder RN, MBA, PhD, AOCN, FAAN
Associate Professor
Director, Nursing Administration and Healthcare Systems Management Luci Baines Johnson Fellow
in Nursing University of Texas at Austin School of Nursing 1700 Red River Austin, TX 78701
(512) 471-7938

On 3/2/2009 2:05 PM, Bill Rhoads <billr@fortscott.edu> wrote:
>
>Ms. Yoder,
>
>I am completing a MS in Nursing Administration degree from Fort Hays
>State University in Hays, Kansas. My thesis uses the Roy Adaptation
>Model as the theoretical basis for nursing home residents57; quality
>of life and adaptation related to safety in their environment. I
>would like your permission to use an adaptation of your model, fig.
>1, 60;Conceptual-Theoretical-Empirical Structure for Studies of Effects
>of Exercise Interventions on Quality of Life for Patients with Cancer,61;
>which was in your article on the Roy Adaptation Model in Nursing
>Science Quarterly, 18(4), 2005. The modes in my study would be self-concept
>and role-function.   I am using the World Health Organization57;s
>QOL-BREF instrument for study measures, and my concepts relate to
>the environment, safety, dignity, and fear.   The figure will have
>appropriate citation to your work.
>
>Thank you for consideration of this request,
>
>Bill Rhoads, RN, BSN, MAOM
>Director of Nursing and Allied Health
>Fort Scott Community College
>210B South Horton
>Fort Scott, KS 66701
>Location: 810 South Burke Street
>620-768-2908 Ext. 11
>Fax: 620-768-2904
>billr@fortscott.edu
>
>--

User Agreement for WHOQOL Bref and related materials

This agreement is between the World Health Organization ("WHO") and William L. Rhoads. WHO hereby grants User a nonexclusive, royalty free license to use the World Health Organization Quality of Life Questionnaire and/or related materials (hereafter referred to as "WHOQOL Bref") in User's study outlined below.   The term of this User Agreement shall be for a period of 1 year, commencing on the date June 1, 2008 .

The approved study for this User Agreement is:

Study Title	The relationship between quality of life, perceptions of safety, and the willingness of nursing home residents to wear an identification device.
Principal Investigator	William L. Rhoads, RN Graduate student at Fort Hays State University Hays, Kansas, USA
Sample characteristics	Elderly nursing home residents, who are mentally coherent and able to give appropriate responses living in the southeast Kansas and southwest Missouri area
Sample size	Power analysis indicates a sample size of 64
Treatment Intervention	None
Total number of assessments	64
Assessment time points	Once during the fall of 2008

WHOQOL Bref version	English
Other measures	I am looking for an assessment instrument to measure patient/resident perception of a safe environment.

This User Agreement is based upon the following conditions:

1. User shall not modify, abridge, condense, translate, adapt, recast or transform the WHOQOL Bref in any manner or form, including but not limited to any minor or significant change in wording or organization, or administration procedures, of the WHOQOL Bref. If User thinks that changes are necessary for its work, or if translation is necessary, User must obtain written approval from WHO in advance of making such changes.

2. User shall not reproduce WHOQOL Bref except for the limited purpose of generating sufficient copies for its own uses and shall in no event distribute copies of the WHOQOL Bref to third parties by sale, rental, lease, lending, or any other means. In addition, User agrees that it will not use the WHOQOL Bref for any purpose other than conducting studies as specified above, unless agreed in writing by WHO. In any event, the WHOQOL Bref should not be used for research or clinical purposes without prior written authorization from WHO;

 3. User agrees to provide WHO with an annual update regarding activities related to the WHOQOL Bref.

4. User agrees to provide WHO with a complete copy of User's raw data and data code books, including the WHOQOL Bref and any other instruments used in the study. This data set must be forwarded to WHO upon the conclusion of User's work. While User remains the owner of the data collected in User's studies, these data may be used in WHO analyses for further examining the psychometric properties of the WHOQOL Bref. WHO asserts the right to present and publish these results, with due credit to the User as the primary investigator, as part of the overall WHOQOL Bref development strategy.

5. WHO shall be responsible for preparing and publishing the overall WHOQOL Bref results under WHO copyright, including:

a.   the overall strategy, administrative set-up and design of the study including the instruments employed;

b.   common methods used by two or more Users;

c.   the data reported from two or more Users ;

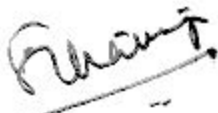d.   the comparisons made between the data reported from the Users;

e.   the overall findings and conclusions.

6.   User shall be responsible for publications concerning information developed exclusively by User and methods employed only by User. Publications describing results obtained by User will be published in User's name and shall include an acknowledgement of WHO. User agrees to send to WHO a copy of each such paper prior to its submission for publication.

7. WHO may terminate this User Agreement at any time, in any event.   Should WHO terminate this User Agreement, User shall immediately cease all use of the WHOQOL Bref and destroy or return all copies of the WHOQOL Bref. In the event of such termination, all other collateral materials shall be destroyed and no copy thereof shall be retained by User. Notwithstanding the return or destruction of the WHOQOL Bref and its collateral materials, User will continue to be bound by the terms of this User Agreement.

8. It is understood that this User Agreement does not create any employer/employee relationship. User and its affiliates are not entitled to describe themselves as staff members of WHO. User shall be solely responsible for the manner in which work on the project is carried out and accordingly shall assume full liability for any damage arising therefrom. No liability shall attach to WHO, its advisers, agents or employees.

Please confirm your agreement with the foregoing by signing and returning one copy of this letter to WHO, whereupon this letter agreement shall become a binding agreement between User and WHO.

WHO:

Dr. Somnath Chatterji
Measurement and Health Information Systems (MHI)
World Health Organization
Avenue Appia
Geneva 27
CH 1211 Switzerland

Date:

USER:

By: William L. Rhoads
Title: RN, Graduate Student
Institution: Fort Hays State University
Address: 115 Birchtree Dr
                 Nevada, Missouri
                        64772
Date: April 1, 2008

Extension of Approval

World Health Organization

Dear Mr Rhoads,

This is fine.

Regards,

Sibel Volkan

Health Statistics and Informatics
The World Health Organization
20 Avenue Appia
CH-1211 Geneva 27
Switzerland

Tel.: +41 22 791 2334
Fax: +41 22 791 4328

From: Bill Rhoads [mailto:billr@fortscott.edu]
Sent: 01 April 2009 21:27
To: Volkan, Sibel
Subject: RE:

Ms. Volkan,

I am writing to request an extension of the approval to use the WHOQOL-BREF tool.
My project was delayed getting started. It is going to the FHSU IRB for approval April
23. The current approval runs through June 1. I would like to extend that date to August
30 if at all possible. Thank you for considering this request.

William Rhoads, RN

Graduate Student – Fort Hays State University

Appendix E

Nursing Home Administrator Approval Letters

Fort Scott Manor
736 Heylman
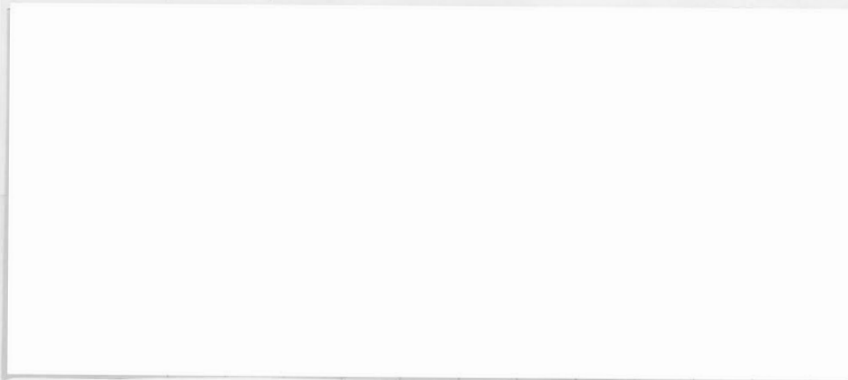Fort Scott, KS 66701
620-223-3120

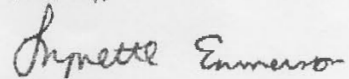Trading Partner Agreement

May 29, 2009

To whom it may concern:

Bill Rhodes, a Fort Hays graduate student, has permission to access residents' charts in Fort Scott Manor.

The following residents have agreed to participate in thee for the program:

Sincerely,

Lynette Emmerson

Lynette Emmerson
Administrator

GUEST HOME ESTATES V
IOLA NURSING CENTER

1336 N. WALNUT STREET
IOLA, KS 66749
Phone (620) 365 6989
Fax (620) 365-8708
incadmin@aceks.com

May 21, 2009

To Whom It May Concern:

I am very happy to have Bill Rhoads, R.N., to complete a survey with his project as part of his Masters Degree. My staff will assist Mr. Rhoads with any areas he requires help with.

Yours truly,

Karen Briggs
Administrator

<u>S</u>unset Manor Nursing Center

206 South Dittmann • Frontenac, Kansas 66763-2299 • Phone: 620-231-7340 • FAX: 620-231-3955

July 2, 2009

Mr. William L. Rhoads, RN, BSN, MAOM
Graduate Student FHSU
12617 E. Osage Nation Road
Nevada, MO 64772

Dear Mr. Rhoads,

This is a letter to give my permission as Administrator of Sunset Manor Nursing Center to allow you to interview some of the residents at this facility for you research project. The following residents have given verbal permission and wish to take part in your research.

Sincerely,

Kevin Knaup

Kevin Knaup, Administrator
Sunset Manor Nursing Center
206 S. Dittman
Frontenac, KS 66763
(620)231-7340

NRMC NEVADA REGIONAL MEDICAL CENTER *Caring with pride* | MOORE-FEW CARE CENTER

May 12, 2009

Mr. Bill Rhoads
12617 E. Osage Nation Rd
Nevada, Mo. 64772

Dear Bill:

It was a pleasure to hear from you. It sounds like you have been very busy with many accomplishments. I'm so glad for you.

Please consider this my approval for Moore-Few Care Center to participate in your research study involving our residents. Attached is a list of residents who have given their approval to participate in your study.

Good Luck –

Sincerely,

Denise Sloniker
Administrator

HEALTH MANAGEMENT OF KANSAS, INC.
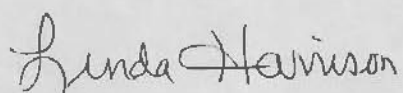
Windsor Place - Iola

Offices: 600 E. Garfield - Iola, K 66749 - 620-365-3183

June 16, 2009

To Whom It May Concern:

I give my permission for Mr. Rhoads to come into Windsor Place and interview our residents for his Master's Thesis.

Sincerely,

Linda Harrison

Linda Harrison
Administrator

Recognizing that all life is precious, we will diligently serve
the needs of each who enter here in a dignified manner.

PRESCOTT COUNTRY VIEW NURSING HOME
301 EAST MILLER STREET
PRESCOTT, KS 66767-4103
913-471-4315   Fax 913-471-4838

August 7, 2009

William Rhoads
Graduate Student FHSU

Dear William,

We welcome you and are glad to participate in your research paper. Thank you for considering our facility.

Pam Speer, Administrator

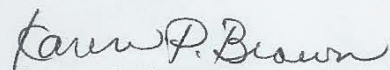# MEDICALODGES™
Fort Scott

July 29, 2009

Bill Rhoads
12617 E. Osage Nation Road
Nevada, MO 64772

Dear Bill:

This is your letter of approval for your research study involving nursing home residents at this facility. Our corporate legal department has looked over the information you provided and given their approval for this.

We look forward to working with you on this research study project!

Sincerely,

Karen P. Brown
Administrator