Geriatric patient satisfaction with discharge medication information

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Geriatric Patient Satisfaction with Discharge Medication Information

Submitted by

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In partial fulfillment of the requirements for the degree of
Master of Science in Nursing

Date of Defense:

April 25, 2006

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April 25, 2006
DEDICATION

This study is dedicated to my husband and children who supported and encouraged me throughout its completion. It also is dedicated to those many geriatric patients who have expressed immense gratitude for those who spent even just a few extra minutes helping them understand their medications and how to take them safely.
ACKNOWLEDGEMENTS

I would like to acknowledge my thesis committee chairperson, Dr. Debra Buchman, for her steady flow of expert counsel, statistical knowledge and mentoring, support, encouragement and sense of humor during the completion of this research study. I also would like to acknowledge both of the other members of my committee, Dr. Tracy Szirony and Dr. Kathy Sink, for their assistance and support.
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CHAPTER I

Introduction

One of the current challenges to healthcare providers is risk reduction with prescription medication use in the growing geriatric population. These risks include polypharmacy, multiple drug prescribers, medication induced illness, increased adverse events and noncompliance with prescriptions. Medical treatment of elders who experience prescription medication problems is associated with a high economic cost. This chapter will introduce geriatric patient satisfaction with medication education provided at discharge from a hospital stay and Roy’s nursing theory of adaptation as the supporting framework for the research. Assumptions and limitations conclude the chapter.

Statement of Problem

Currently, people over the age of 65 years consume 25% to 30% of all prescription medications (Lueckenotte, 2000). This population also accounts for approximately 36% of all acute hospitalizations (National Center for Health Statistics, 2001). Americans over age 65 years represent approximately 12% of the population, or 34.5 million people, and growth estimates predict that by the year 2030, 20% of the population, or 70 million people, will be in this age bracket (National Center for Health Statistics).

Post-discharge difficulty taking medications in this population is cited frequently in the literature (Forster et al., 2004; Merkatz & Couig, 1992; Tierney, Worth, Closs, King, and Macmillan, 1994). Lueckenotte (2000) estimates that 125,000 deaths and
300,000 hospitalizations annually are attributed directly to issues of noncompliance with cardiovascular medications in the geriatric population.

Research that measures knowledge of prescribed medications, before and after education interventions, has revealed that current medication education for geriatric patients is frequently not sufficient (Alibhai, Han, & Naglie, 1999; Holloway, 1996; Lee, Wasson, Anderson, Stone, and Gittings, 1998; Tierney, Worth, Closs, King, and Macmillan, 1994). Multiple studies have identified a lack of understanding about medications as a risk factor for noncompliance and adverse effects in geriatric patients (Misteaen, Duijnhouwer, Wijkel, DeBont, & Veeger, 1997, Cargill, 1992). Interventions to improve compliance and decrease adverse affects in this population have received limited attention in the professional literature to date.

A lack of description of the patient’s perspective or satisfaction with provided medication education was noted within the nursing literature. Exploring satisfaction levels with current geriatric education interventions seems necessary for the understanding of, and future development of, more effective education processes that can reduce risks in this population. Patient education techniques can be improved when a comprehension of the patients’ point of view and satisfaction levels with education interventions are obtained (Redman, 1997).

Statement of Purpose

This study describes the level of satisfaction with the medication information provided to geriatric patients at the time of discharge from an acute care hospitalization. It also examined if living alone has a significant effect on satisfaction levels. Geriatric
patients with no changes in pre-hospital medications were compared to those with new prescriptions or changes in existing prescriptions to explore if satisfaction levels differ significantly.

Research Questions

There were three research questions for this study. Research question 1: What is the level of satisfaction of geriatric patients with the information about medications provided at discharge? Research question 2: Is there a difference in mean levels of satisfaction between geriatric patients who live alone and those that live with others? Research question 3: Is there a difference in mean levels of satisfaction between geriatric patients who have a new or changed prescription medication at discharge and those without new or changed prescription medications?

For the purposes of this study, geriatric satisfaction was defined both conceptually and operationally. This variable was defined conceptually as a part of the geriatric patient’s adaptation system perception of themselves, being sufficiently informed about their medications in order to demonstrate positive behaviors towards medication taking, and being able to free up energy for attending to other stimuli (Roy & Andrews, 1999).

This variable was operationalized as the total score on Robert Horne’s Satisfaction with Information about Medicines Scale (SIMS) (Horne, Hankins, & Jenkins, 2001). This tool includes two subscales that measure satisfaction with information received about action and usage of medication, and satisfaction with information received about potential problems with prescribed medication.
Nursing Conceptual/Theoretical Framework

The Roy Adaptation Model (Roy & Andrews, 1999) was chosen to serve as the framework for this study because of its focus on the process of human adaptation to stimuli in both internal and external environments. Stimuli is defined as the input for humans as they interact with their environment (Fawcett, 2000). This model’s goal of nursing is to enhance and strengthen humans’ adaptation potential (Fawcett).

In the Roy model, health is “a state of being and becoming integrated as a whole Person” (Roy & Andrews, 1999, p. #13) and “being in a position to achieve the highest possible fulfillment of human potential” (Roy & Andrews, p. #8). Enhancement and strengthening of the human’s adaptation potential is accomplished by assessment of behavior and stimuli that is influential to effective coping. Implementation of interventions is the nursing attempt to manage stimuli, promote person’s and environmental transformations, and/or decrease ineffective adaptation or coping responses (Roy & Andrews). Maintaining integrity of individuals and strengthening adaptive responses then frees up a person’s energy for wellness and healing (Fawcett, 2000; Roy & Andrews).

This study describes stimuli that influence adaptation to prescription medication and satisfaction with the interventions that are currently in use to assist with this adaptation, in geriatric patients after hospital discharge. Further understanding of the processes that influence adaptation and coping is accomplished by assessing behavior and stimuli such as the satisfaction level of education interventions.
Hypotheses

Differences in mean satisfaction levels will be demonstrated between geriatric patients who live alone and those that live with others.

Differences in mean satisfaction levels will be demonstrated between geriatric patients who receive changes in medication information from those who do not have changes in medication while hospitalized.

Significance

The significance of this study, both socially and economically, becomes apparent when the growth trends for the geriatric population are examined in the United States. Individuals over the age of 65 years are the fastest growing segment of the population in the U.S., and also in the United Kingdom (Bull, 2000; National Center for Health Statistics, 2001). Currently, those over 65 years are the largest consumers of health care, and estimated cost of drug related morbidity is as much as $7 billion annually (Merkatz & Couig, 1992; Lueckenotte, 2000).

Geriatric patients are at increased risk for medication-induced illness and hospitalization related to the presence of chronic conditions and multiple physicians prescribing medications, in addition to physiological changes that accompany aging (Wolfe & Schirm, 1992; Bressler & Bahl, 2003; Forster et al., 2004; Ryan, 1999). Estimates of the economic cost of drug related hospitalizations for adverse events are $76 billion (Lueckenotte, 2000).
Geriatric patients accounted for 49% of all days of care in hospitals, 36% of all hospital stays in 1997, and are spending three times as much as younger people on healthcare (AARP, 1996; National Center for Health Statistics, 2001). The urgency needed to decrease the risk of adverse medication events in this population and reduce the associated healthcare cost cannot be understated. The economics of taking medications improperly are far reaching. Noncompliance, including over and under use of medications by geriatric patients, has been well documented in the literature and is noted to contribute to increased hospitalization and cost in specific health conditions such as cardiac disease (Martens, 1998; Lueckenotte, 2000; Wolfe & Schirm, 1992).

Nursing is in a unique position to positively influence the quality of care that geriatric patients receive when discharged from the hospital. This research is needed to determine if the current education process is satisfactory to the elderly. An understanding of patient levels of satisfaction and influencing factors may facilitate education that is individualized to elders and incorporates strategies that encourage effective adaptation to pharmacological therapy.

Assumptions

This study was based on the assumption that medication information is provided to all patients prior to time of discharge, and that geriatric patients can complete the SIMS tool about provided information 1-7 days post-discharge. It is also an assumption of the study that these patients want to be informed and well educated about their health status and treatments, including medications. There is also the assumption that education and cognitive understanding about prescription medications will enhance effective
adaptation. Additional assumptions are that the SIMS tool can be effectively administered over the phone and that the sample size can be achieved in the stated data collection time frame.

Summary

This chapter introduced the current challenges to health care providers in risk reduction with prescription medication use in this growing population. The rapid growth of the geriatric population and associated billions of dollars estimated to be spent annually to address these problems were described. The purpose of the study was to describe geriatric patient satisfaction with discharge medication education framed within Roy’s nursing theory of adaptation. There are significant economic costs and associated morbidity and mortality with prescription medication problems in elderly patients.
CHAPTER II

Literature Review

This study was designed to describe geriatric patient satisfaction with discharge medication education and to identify the effects of two possible influencing factors. This chapter describes the theoretical framework of Roy’s adaptation system and the research variables placement within this model. A conceptual schematic model is provided to visually demonstrate the relationships within this study. Selected literature then was reviewed which was relevant to the stated problem, research question and proposed methodology. The chapter then concludes with a summary of that review.

Nursing Conceptual Framework

Roy’s model of human adaptation was chosen as a framework to study geriatric patient satisfaction with medication education provided at discharge from the hospital. This theory focuses on the holistic human capacity to adapt to changing environments (Roy, 1984). Geriatric patients are confronted with many changes in their environments such as hospitalization, illness, and pharmacological treatments.

According to Roy and Andrews (1999), a person’s response to environmental stimuli can be adaptive or ineffective. Roy’s description of adaptation is further classified into four adaptive modes that include one physiological mode, and three psychological modes. The three psychological modes include self-concept mode, role function mode and the interdependence mode (Fawcett, 2000).

Environment is categorized in Roy’s model as both internal and external stimuli that include conditions, circumstances, and influences that interact mutually with human
adaptive systems (Roy & Andrews, 1999). This stimuli is broken down into three types, focal, residual and contextual. Focal stimuli are those that immediately confront a person. New medications or changes in prescriptions would be the focal stimuli that the individual is dealing with as a result of hospitalization. Contextual stimuli are all other stimuli present at any given moment such as existing health status, presence of social support or literacy level. Marital status, living situation and age would be considered contextual stimuli. Residual stimuli are things that influence or affect adaptation, but cannot be validated or measured (Roy, 1984; Roy & Andrews, 1999). This stimulus could include the individual’s own view point or interpretation of the world around them. Residual stimuli could include many of the possible confounding variables such as cultural influences, previous experiences with health care or medications or socioeconomic concerns.

The changes in the environment are viewed as external and internal stimuli and are processed within this adaptation system through the regulator and cognator coping mechanisms (Roy & Andrews, 1999). Adaptation to different stimuli is dependent on two subsystems of coping processes, the regulator and the cognator. Roy (1984) defines the regulator processes as the receiving of stimuli through neural-chemical-endocrine pathways which then initiate responses predominantly through the physiological controls. The cognator subsystem of coping processes stimuli through the perception, information processing, learning, judgment and emotional response pathways (Roy & Andrews).

Both coping systems are involved in assisting individuals with adaptation to stimuli but the focus of this discussion will be the cognator mechanism. The process of
medication education is an attempt by the health care provider to manage or influence stimuli (Roy, 1984) in an attempt to enhance adaptation to prescription medications. The cognator mechanism enables individuals to respond to stimuli through channels of emotion, perception, learning and judgment (Fawcett, 2000). Behavior or adaptive responses and ineffective responses are the potential outcomes of the coping system (Roy & Andrews, 1999). A schematic representation of Roy’s model adapted for this study is presented as Figure 1.

![Figure 1. Satisfaction Level as a Continuum within Geriatric Cognitive Coping and Effective Adaptation to Prescription Medication.](image-url)
All of the input or focal stimuli that the geriatric patient is confronted with such as hospitalization, illness, and prescription medication interacts with and influences the intervention of medication education. The satisfaction level is placed within the middle of the two human coping systems. The physical recovery (regulator coping) and the psychosocial recovery (cognator coping) are responses to the stimuli, and also are responsive to the medication education intervention. Geriatric satisfaction levels as a continuum are part of the cognator coping mechanism and interact with the continuum of effective adaptation to medication taking.

The common goal of medication education is to enhance effective adaptation, as in the demonstration of using medications as instructed. Geriatric patients frequently demonstrate ineffective adaptation in the form of noncompliance and adverse drug events. Feedback mechanisms relate this ineffective adaptation to readmission to hospital and continued or worsening illness. The researcher’s goal was to explore cognator responses to medication education interventions by measuring satisfaction levels with provided information.

**Review of the Literature**

This section reviews the literature on the topic of discharge medication information education in geriatric patients and related research. Studies examining hospital discharge planning for the elderly were explored first. Research that looks at medication information education in this population also was examined. Research about the Satisfaction with Information about Medicine Scale (SIMS) is discussed. There are a limited number of studies that specifically examine discharge medication education in
this population. Related research was examined and discussed and includes compliance
with medications in the elderly, elders knowledge of medications, nurses and other health
professionals attitudes toward discharge medication teaching, and comparisons of the
effectiveness of various types of teaching interventions in the geriatric population.

The nursing literature related to medication discharge education contains mostly
small descriptive and exploratory studies. Emphasis has been on attempts to measure
patient knowledge of medications, pre- and post-education interventions (Alibhai et al.,
1999; Esposito, 1995; Holloway, 1996; Lee et al., 1996; Ryan, 1999; Wolfe & Schirm,
1992), and medication education and its relationship to compliance and adherence
(Cargill, 1992; Esposito, Ryan; Wolfe and Schirm).

Discharging Planning for the Elderly

Decreasing lengths of stay and the managed care system have supported the need
for discharge planning for high-risk geriatric patients identified within the hospital
environment. High risk individuals are those who meet specific discharge planning
screening criteria or those with obvious functional difficulties. Independent patients who
do not meet these specific criteria for these services also report similar problems after
discharge as those experienced by “high risk” geriatric patients (Bull, 2000, Naylor et al.,
1999).

Bull and Roberts (2001) used an ethnographic approach to explore effective
discharge planning for this population going home from a London rehab hospital. Health
care professionals (n=21), 2 elder patients and 1 family member participated and
provided descriptive data that provided information about what supports and what
impedes a “proper” discharge. Relevant findings included that patients and families need to be more involved in the process, including medication education, and breakdowns in communication between healthcare workers, patients, and families can result in unmet needs, including informational needs (Bull & Roberts, 2001).

Bull (2000), in her review of 30 research studies of discharge planning, noted that, although studies in both the US and UK used multiple methods and samples, findings consistently revealed that geriatric patients are not getting sufficient information about their medications. Bull stated that much of this research examines outcomes and does not describe the processes very well that influenced the outcomes. Some of the conclusions of the review are that family caregivers had received limited or no preparation to assist patients once they got home, although they were recognized and expected to provide the primary support at home. Additional findings included difficulties with medications as one of the primary reasons for readmission to the hospital (Bull, 2000), and the recognition that independent elders who did not have functional deficiencies were more likely to be readmitted to the hospital because they did not qualify for community nursing services after discharge.

Worth, Tierney, and Watson (2000) used the ethnographic method to explore a patient-centered (n=50) account of pre- and post-discharge information needs. Although not elder specific, the findings are meaningful for this study. Findings included that informational needs are highly individualized and are strongly related to expectations (Worth et al., 2000). Other pertinent findings included many patients did not recognize informational needs until they were attempting to readjust at home. Professional
caregivers realized the importance of providing information to patients, but experienced challenges in practice related to time constraints (Worth et al.). This has important implications for the education of elders, because fast paced teaching is not tolerated as well in this population (Lueckenotte, 2000). The findings and methodologies of these descriptive studies about discharge planning in general are similar to those used to examine medication information education at discharge.

**Discharge Medication Education**

Specific studies that have examined this type of patient education include Martens’ (1998) ethnographic study to explore the discharge component of medication education. As little prior research was noted, the qualitative approach provided a rich description of discharge medication education. The process was described by Martens as “an interdisciplinary process that is disjointed, uncoordinated, and largely driven by accreditation requirements” p.#334. This study used interviews, (n=114) both by telephone and in person, 1-2 weeks post-discharge, combined with document review and observation from two different U.S. sites. Recommendations based on the data included the need for individualized education that is based on assessment of need and understanding of medications, learning ability and what the patient wants to know (Martens, 1998). This study also showed that the use of a combination of verbal and written formats decreases issues of “forgetting.” Inconsistency between documentation of provided education and patient reports of what was received also were noted frequently (Martens).
When they used a descriptive correlation approach to examine patient and caregiver perspectives of discharge from the hospital, Tierney, Worth, Closs, King, and Macmillan (1994) also found inconsistency between documentation of provided medication education and patient’s report of what they received. This study had a much larger sample size (n=326) of subjects and was conducted in Scotland by interviewing subjects in the hospital and at 2 weeks, 6 weeks, and 3 months post-discharge. Only 22% of subjects could remember receiving information about their medication and 32% of caregivers reported inadequate information about medications was provided to patients (Tierney et al., 1994).

Misteaen, Duijnhouwer, Wijkel, DeBont, and Veeger (1997) found in their Amsterdam sample (n=145) that information needs were mentioned by 80% of their subjects in a post-discharge study examining problems encountered after discharge from hospitalization. Of those information needs mentioned, 23% were specific questions about medications.

In a Canadian study (Alibhai, Han, & Naglie, 1999) examining time spent on discharge medication education provided to older patients, the impact of that intervention on knowledge and satisfaction, and identification of barriers was done by physicians in the Toronto area. This descriptive correlation research with a sample of 47 patients and their participating physicians and pharmacists reported similar findings as other studies, with almost half of patients reporting they received no medication education. Comparison between patient record and patient reports showed discrepancies similar to the studies previously discussed. Of the patients that reported receiving discharge
medication education, only 30% reported receiving written information. All participants who reported receiving medication education also were asked about their satisfaction with what they received.

These researchers found, on average, participants reported high satisfaction scores (mean scores of 3.4 and 4.3) with the overall teaching they received. This patient satisfaction rating was measured on a 1-5 point scale ranging from not at all satisfied to extremely satisfied, and was obtained as part of the researcher designed questionnaire. No reliability or validity is reported for this tool though the authors state it was pilot tested and based on a review of the literature. The researchers identified a possible explanation for the high satisfaction levels as the participants wanting to avoid criticizing hospital staff who provided their care (Alibhai, Han, & Naglie, 1999).

Another small exploratory study was done in Australia by Driscoll (2000), who explored patient and family caregiver perceptions of, adequacy of, and utilization of information received while hospitalized. Although not geriatric specific, the mean age of subjects was 73 years in the convenience sample of 40 pairs of patients and their caregivers. This study’s findings were different than others reviewed with participants denying information needs after discharge. It is unknown if this is related to the paired sampling or to the difference in the healthcare system in Australia. More participants reported receiving information, and were satisfied with that information than in other studies reviewed.

Satisfaction with information provided was determined by a combination of both qualitative questions and a quantitative questionnaire. Higher satisfaction with
information was related to the family member or caregiver being present during teaching. Written information that accompanied verbal teaching was reported by 53% of subjects and was considerably higher than other studies examined in this review. Medication information was not mentioned as received or needed by participants in this study.

*Individualized Medication Education*

Ryan and Chambers (2000) evaluated an individualized discharge medication education program’s effect on knowledge in their correlation study of 15 elders using a pre- and post-intervention questionnaire. A mean increase in knowledge of 25% was noted after the individualized teaching intervention but may not be consistent with health care in the U.S. as the average length of stay for this Ireland sample was 14 days. DeBrew, Barba, and Tesh (1998) also identified individualization as a needed component of medication teaching, which can be developed after assessing elders’ knowledge, practices, and attitudes towards medications. In the development of an assessment tool to facilitate this intervention, the researchers noted that the greatest knowledge deficit found in the (n=20) sample of home health patients was for medications prescribed during a recent hospitalization (DeBrew et al., 1998).

Schmidt (2003) looked at patient perceptions of hospital nursing care with a grounded theory method and identified patients’ (n=8) desire for nurses to deliver care that was not standardized, but individualized to their specific situations and needs. Taira (1991) designed a study looking at effectiveness of individualized teaching protocols on knowledge levels in her convenience sample (n=20) of home health or nursing center clients. Increased knowledge was noted post-intervention, which consisted of assessing
patients’ knowledge of medications first, and then developing computer generated teaching sheets specific to that person’s needs and prescribed medications and providing both verbal and written medication education. Although not specifically referred to as satisfaction, the researcher stated in her conclusions that the individual medication summary sheets “were truly appreciated by the clients” (Taira, 1991).

A geriatric specific intervention that also revealed the usefulness of individualization was identified in the Hayes (1998) emergency department study of medication education that was specifically designed with older patients learning needs in mind. The teaching included written instructions with large font, which were simplistic, patient specific, and contained personalized information about medications prescribed during an emergency department visit. The sample of geriatric patients (n=60) from three rural emergency department sites was randomly assigned to either an intervention group or a standard discharge medication education group. Post-intervention knowledge was evaluated and the intervention group demonstrated significantly more knowledge of medications than the control group. Individualization of discharge medication information and education is consistently identified as a needed component that can contribute to increased knowledge and satisfaction.

**Knowledge and Compliance**

Wolfe and Schirm (1992) and Esposito (1995) also examined effects of medication education on knowledge and compliance in geriatric patients. Using a quasi-experimental design, Wolfe and Schirm compared (n=50) patients who were from two U.S. hospital sites. The experimental group was given pre-discharge medication
counseling supplemented by a written aid, and was compared to a control group who did not receive the counseling. Findings were that slight increases in knowledge were noted in the experimental group post intervention and no difference in compliance was noted in the groups. No significant correlation between knowledge and compliance was found.

Esposito (1995) compared medication information and education interventions in her study of (n=42) geriatric patients hospitalized in a U.S. community medical center and found that combined verbal interventions with written schedules had a positive effect on compliance rates. Esposito, along with Wolfe & Schirm, (1992) identified forgetting as a factor in noncompliance in older patients. Ryan (1999), in her review of the literature related to medication compliance in geriatric patients also recognizes that forgetting may play a role in noncompliance with medications.

Cargill (1992) examined factors affecting compliance during her study of elderly outpatients (n=70) of a U.S. Veterans Administration clinic. Results showed that those who received the individualized teaching intervention combined with a follow up telephone call demonstrated improved compliance compared with those who just received the teaching intervention.

*Combination Approaches to Patient Education*

Verbal instruction alone does not seem to be an effective way to provide discharge medication information and interventions that combine verbal instruction with another form whether written, computer generated individualized sheets, or follow up telephone calls have consistently shown in this literature to positively effect outcomes (Esposito, 1995; Hayes, 1998; Taira, 1991; Wolfe & Schirm, 1992). Holloway (1996), in
her descriptive study of 20 hospitalized patients in Scotland reports that only one patient reported receiving written information in addition to verbal teaching and unstructured verbal teaching seems to be easily forgotten after discharge. Many limitations to this study were noted such as absence of reliability or validity for tools used and the exclusion of information on sample selection. In this health system, pharmacist and physicians are reported to be the primary providers of formal medication information (Holloway, 1996).

The use of multiple strategies in patient teaching also is supported in Theis and Johnson’s (1995) meta-analysis of the process of patient teaching. They examined the types of teaching, and recommended that verbal instruction should be used only with support from some other form of media. Even with this knowledge, verbal education continues to be the prevailing type used in discharge medication education (Alibhai et al., 1999; Holloway, 1996; Martens, 1998; Tierney et al., 1994). Another important finding was that structured teaching methods are related to better outcomes than standard care. This meta-analysis revealed that much of the research about teaching strategies was not able to be included because of poor methodological quality. The use of videotapes and computer-assisted instruction was recommended to reinforce teaching in the home, post-discharge for acute care teaching, as in discharge medication education (Theis & Johnson).

Post-Discharge Evaluation of Education

The use of the telephone to gather data from discharged patients was used by Lee, Wasson, Anderson, Stone, and Gittings (1998) in a study to assess post-discharge information needs, assess patient perceptions of recovery post-discharge and provide
additional information or referral to other services if needed 24-48 hours after going home. Many of the participants (n=206) discharged home from the two hospitals in the U.S. reported that they were adequately educated but, when asked during the follow up telephone call, 50% had questions including specifics about how or when to take medications (Lee et al., 1998). This discrepancy between what patients report as adequate education, even though they had many more questions, was not explored by the researchers.

This post-discharge telephone contact approach has provided participating hospitals with specific information on discharge medication education deficiencies and early recognition of post-discharge information needs and referrals, which were used to improve the discharge process. High levels of reported patient satisfaction with the follow up call and the opportunity to have questions answered contributed to the expansion of this service by the hospitals. A preexisting nursing call center facilitated this study method and its expansion to include many more units (Lee, Wasson, Anderson, Stone, and Gittings, 1998). The quality improvement appeal and low cost to implement make this study attractive for replication. The researchers reported that unit managers used data collected during phone calls to develop improved education for patients and noted decreased in information needs after implementing the changes (Lee et al., 1998).

This study also used the telephone to evaluate patients’ satisfaction with the information they received prior to discharge home from the hospital. A search of Cinahl, Pub-Med, and the HAPI database resulted in the location of only one published measurement tool which looks specifically at the medication education process from the
patient’s point of view. This tool is the Satisfaction with Information about Medicine Scale (SIMS) and was developed by Horne, Hankins, and Jenkins (2001). This is a 17-item questionnaire that examines patient satisfaction with information received about medication. The two subscales of the tool are satisfaction with information about action and usage of medications, and satisfaction with information about potential problems with medications. Psychometric properties of this SIMS tool were established by the creators through its use in eight different diagnostic groups of both inpatients and outpatients who were taking one or more medicines. The scale was used with over 800 patients over a 3 year span and is now available for use for research and audit with permission from the developers (Horne et al., 2001).

A literature search located only one published study using the SIMS and is a study examining HIV patient satisfaction (n=115) with information they received about highly active antiretroviral therapy (HAART) (Gellaitry et al., 2004). This study examined satisfaction in relation to treatment decisions. Differences in mean satisfaction levels between treatment decision groups were found and the researchers discuss the potential use of the SIMS to enhance planning and delivery of individualized information for patients and also identify patient concerns regarding HAART (Gellaitry et al). Although not geriatric in focus, this study demonstrates the utility and effectiveness of the SIMS tool in research.
Healthcare Provider Perceptions of Barriers to Medication Education

Strategies are not the only challenge in presenting effective discharge medication education to geriatric patients. A qualitative case study approach was used in Latter, Yerrell, Rycroft-Malone, and Shaw’s (2000), a United Kingdom study identifying current practice and analyzing contextual influences on nurse provided medication education. This study used audio recordings (n=37) and observations (n=48) of nurse client interactions, and then post-interaction interviews with nurses (n=29) and patients (n=39) to identify barriers. These included high workload, lack of time, perceived patient lack of interest in education or passivity, and the lack of therapeutic nurse-patient relationship. Knowing the patient and assessing the patient’s attitudes and beliefs about medication was associated with improved medication education (Latter et al., 2000).

An earlier study examining barriers to patient education used a mailed questionnaire format to explore U.S. healthcare faculty, both nursing (n=68) and physicians’ (n=65) perceptions (Lipetz, Bussigel, Bannerman, & Risely, 1990). Reported perceived barriers included the lack of effectiveness, the lack of impact of education on compliance, and lack of patient interest in behavior changing. Nurses also cited lack of third party reimbursement with only certain education programs qualifying for payment (Lipetz et al., 1990).

Summary

The current picture of discharge medication education is becoming clearer. Global researchers are exploring and describing current practice with both its strengths and limitations. Geriatric patients are not consistently receiving adequate information
about their medications. Discharge medication education’s relationship to knowledge is demonstrated with approaches that combine verbal teaching with another reinforcing format that can be available to patients in the home after discharge. The relationship of knowledge to compliance is not a clear one yet.

Structured education that is individualized and based on assessment of patient needs and preferences is emerging as a blueprint of effective medication education. Perceived barriers to achieving this level of medication education are identified as time constraints, forgetting, lack of therapeutic relationship between nurse and patient, and lack of interest or motivation by patients. Most of the identified barriers are from the educator’s perspective and the patient’s point of view seems to be missing. This study will contribute to the current knowledge by investigating the geriatric patient’s point of view through the examination of satisfaction with current discharge medication education.

The body of knowledge about discharge medication education is in a state of early development. Very few of the empirical studies reviewed had large randomly assigned samples. Small sample sizes without power analysis were noted in many studies. Conceptual frameworks were noted in only 2 of the 20 studies reviewed. Comparisons of findings was challenging related to the international body of literature in this topic. Locations of studies included Amsterdam, Scotland, Netherlands, Ireland, Canada, U.S. and London. Lengths of stays were significantly longer in some countries and significance of findings within differing healthcare systems was challenging.
Larger replication studies need to be done in this area of nursing. Exploring the geriatric patient’s level of satisfaction with existing discharge medication education will contribute to the understanding of their point of view and enhance the development of processes that promote effective adaptation to pharmacological treatments.
CHAPTER III

Method

This study was designed to describe geriatric patient satisfaction with discharge medication information received, and to identify the possible effects of two influencing factors. This chapter describes the methods that were utilized in describing satisfaction with discharge medication information. The study design is identified and a description of the subjects is provided. The Satisfaction with Information about Medications (Horne, Hankins, & Jenkins, 2001) research questionnaire being employed for this study is described. The data collection process is explained thoroughly and the chapter concludes with a step-by-step description of the data analysis.

Design

A non-experimental, descriptive design was selected for this study in order to expand the knowledge base about geriatric satisfaction with medication education provided at time of discharge from an acute care hospitalization. Group comparisons using demographic variables such as living alone or with others were done to examine the possible influences on satisfaction level. Satisfaction levels of those with changes in prescription medications also were compared to those without changes in medications. The two-step data collection took place over a 6 week period.

Data were collected for the first step during the investigators’ biweekly visits to both hospital sites for recruitment of subjects. The second step of data collection occurred during the follow-up phone calls to participants at 1-7 days after discharge.
Demographic data and the completion of the Satisfaction with Information about Medicines Scale (SIMS) occurred during the follow-up phone calls.

**Materials**

The instrument chosen for this study was the Satisfaction with Information about Medicines Scale (Horne, Hankins, and Jenkins, 2001). This is a 17-item questionnaire that examines patient satisfaction with information received about medication. The two subscales of the tool are satisfaction with information about action and usage of medications and satisfaction with information about potential problems with medications.

A search of Cinahl, PubMed, and the HAPI database resulted in the location of only this one measurement tool which looks specifically at the medication education process from the patient’s point of view. Other instruments examine knowledge or compliance with medication or look specifically at one medication or a single disease process or intervention.

Horne, Hankins, and Jenkins (2001) developed the SIMS questionnaire after also finding no available instruments that assessed patient requirements for medication information. The responses to each of the questions on the SIMS are that the person received too much, about right, too little, or no information about medications. There also is an answer category designated for no information needed in regards to medication.

**Internal Consistency**

Reliability of the total SIMS scores for the initial sample ranged from .81 to .91 of (n=826) patients and was demonstrated using the Cronbach’s alpha scores for eight different diagnostic categories of patients. The eight different groups and their individual
total SIMS Cronbach’s alpha scores were: anticoagulant ($\alpha=.85$), asthma ($\alpha=.89$), cardiac inpatient ($\alpha=.89$), general medicine inpatient ($\alpha=.88$), cardiac rehabilitation ($\alpha=.91$), insulin treated diabetic ($\alpha=.81$), oral anti-hyperglycemic diabetic ($\alpha=.88$) and oncology ($\alpha=.88$) (Horne, Hankins, and Jenkins, 2001). The two SIMS subscales showed lower reliability coefficients ranging from .77 to .89 with two exceptions: the action and usage subscale with patients in the anticoagulant group had a Cronbach’s alpha of .67 and the potential problem subscale with insulin-treated diabetic patients had a Cronbach’s alpha of .61 (Horne et al., 2001).

Test-retest reliability was demonstrated by a repeat administration of the SIMS at a 2 week follow-up appointment with the anticoagulant group ($n=72$) which included both stable and unstable clinical patients. Pearson correlations were greater than .60 and statistically significant ($p<.01$) for both the potential problems subscale and the total SIMS in both stable and unstable anticoagulant subjects. In the unstable group, the action and usage subscale had a test-retest correlation .40, ($p<.05$).

Horne, Hankins, and Jenkins (2001) reports construct validity to be demonstrated by a positive correlation ($r=.31, p<.05$) between a cardiovascular medication high satisfaction score obtained from the SIMS and a high adherence to a cardiovascular medication (anti-cholesterol agent). The total SIMS scores were also negatively correlated ($r=-.33, p<.05$) to a concerns subscale of the Beliefs about Medications Questionnaire (BMQ) Specific Version, that measures patient beliefs about the dangers or problems with taking medications. Those demonstrating less satisfaction with information received on the SIMS potential problems subscale also demonstrated higher
levels of concern in the BMQ tool (Horne et al., 2001). The authors report the SIMS was able to be completed by most participants within 10 minutes and seemed well accepted by patients with a very low proportion of data missing.

Subjects

The settings for this study were a university hospital in a medium, midwestern city in the U.S. and a community hospital in a small midwestern rural college town. Two medical surgical floors at each site were the locations for recruitment of participants. The target population was hospitalized, independent geriatric patients, aged 65 years and older, who were discharged home with at least one prescription medication.

Inclusion criteria.

- Age 65 years old and older
- Being discharged home within 24-48 hours
- On at least one prescription medication
- Documented as alert and oriented to person, place and time during current hospitalization
- Ability to communicate both verbally and in writing using the English language
- Verbalizes ability to take medications independently at home
- Access to a working telephone

Exclusion criteria.

- Significant hearing loss that would interfere with the participants ability to hear verbal information or instructions, and/or participate in a telephone interview post discharge
• Other conditions that also may interfere with determining satisfaction levels such as intractable pain

A power analysis was done for the primary data analysis for this study which was a two-way ANOVA. The factors were living situation with two levels (living alone or living with someone), and the change in medications at discharge with two levels (a change which includes those with new prescription medications, changes in dosage or frequency of existing medications, or both a new medication and a change in an existing medication or no changes). Using an alpha level of .05, a total of 60 subjects (10 subjects per cell) were needed to achieve 81% power to test the first main effect with an estimated effect size of .4 and 82% power to test the second main effect with an estimated effect size of .4. This sample size also achieves 46% power to test the interaction with a .3 effect size.

Data Collection

Sampling.

A convenience sample was planned and any geriatric inpatients meeting the inclusion criteria were approached for possible participation. Patients who were known to the staff nurses on participating medical surgical units of the two hospitals to be planned for discharge in the next few days and meeting the inclusion criteria were given a basic information/cover letter by the staff nurses. This initial cover sheet gave general information about the study and had a space for the staff nurse to fill in the room and bed number and indicate that patient’s interest in the researcher coming to their hospital room and describing the study in more detail. Patients who wished to have the researcher
come talk to them about the study returned the initial form to the staff and it was deposited in a marked researcher box on each participating unit. The researcher visited each unit twice weekly and checked the boxes for sheets. Patients who indicated willingness for the researcher to come talk to them about the study were approached by the researcher. Patients approached by the researcher were given a second cover/memo sheet with more detailed study information, their rights as participants, and researcher contact information. Patients who wished to participate provided the researcher with their name and phone number.

Protection of Human Rights

The Institutional Review Boards of Medical University of Ohio and Wood County Hospital reviewed and approved the research proposal. All participants were provided with a cover/memo sheet and gave verbal consent prior to any protected health information being obtained. All protected health information was secured and stored in a locked cabinet in the office of the primary investigator. All electronic files contain only de-identified data and all patient identifiers were shredded at the earliest opportunity.

The researcher explained the study to each potential participant and provided the detailed cover/memo sheet to all who expressed a desire to participate. Reasons for nonparticipation were recorded and tracked. Each participant’s name and phone number was added to a master list of participants at the time of recruitment and assigned a unique number which was used to identify all data collected during the post-discharge phone call. The telephone call script was followed with each participant by the researcher, and
participants who were unable to be reached or decided to withdraw participation were tracked.

Demographic and protected health information collected during the post-discharge phone call included age, gender, ethnicity, marital status, living arrangement, current number of prescription medications, and prior problems with prescriptions. The patient also was asked during the follow up phone call if they received any new prescription medicines or if they were instructed to make any changes in dose or frequency of prior prescription medicines during this hospitalization. They also were asked at the same time if they received oral, written or printed instructions and if any family or support person was present during discharge medication education. The 17 question SIMS tool then was administered with all responses being recorded by the researcher as they were provided. The participant’s identification number was marked as completed on the master list of participants at the end of the phone call.

The master list of all participant names and telephone numbers was kept in a secured area by the researcher until all data collection was completed and then shredded. A codebook was developed and the data were entered into the computer statistical program SPSS. The electronic data file was de-identified by not entering the patient’s name, telephone number, or other patient identifiers and by removing hospital discharge dates. The paper data collection sheets and SIMS forms were stored in a locked cabinet in the office of the primary investigator.
Participants who indicated to the researcher that they had questions, concerns, and/or difficulties with any medications during the post-discharge telephone call were instructed to contact their primary care provider as soon as possible. Any participants with emergent concerns or difficulties were instructed to call their local emergency department if unable to contact their primary care provider.

Limitations

The presence of extraneous or confounding variables was identified as a limitation of this research. Time and financial constraints limited this study to only two sites and the reduced generalizability is acknowledged. Selection bias also was identified by the researcher as a potential limitation. Patients who were willing to participate may not represent the target population well (Burns & Grove, 2001). The use of convenience sampling and only two floors of two institutions limit the study’s usefulness to the general geriatric population.

Data Analysis

Data coding and entry into SPSS version 11.5 for windows was done after data collection was completed. Inspection of the data for unusual values, missing data, or errors also was done at this time. Calculation of total SIMS scores and total action and usage and potential problem sub-scores also was completed.

Descriptive statistics were utilized as the first part of the planned data analysis using SPSS version 11.5 for Windows. Description of variable frequencies and their distributions throughout the sample were reported in both narrative and table or graphical formats.
The second data analysis step was inferential and compared means of both total SIMS scores and the two SIMS sub-scores among the grouping variables with a multi-factorial ANOVA also using SPSS. The research questions that asked if patients’ living situation or changes in medications affect geriatric patients’ satisfaction level were addressed with this data analysis.

Summary

This chapter described the non-experimental design used to describe geriatric satisfaction with medication education at discharge and the further examination of living situation and changes in medications for possible effects on those satisfaction levels. The SIMS measurement tool is described and its reliability and validity are presented. The inclusion and exclusion criteria for participants are listed. The convenience sampling is described.

The use of informed verbal consent, de-identification of data, and referral to primary care provider with questions or problems are ways in which protection of human rights were addressed. Threats to validity and reliability were identified as extraneous variables, history, and maturation. Attempts to limit those threats were discussed. The assumption that all patients are receiving medication education prior to discharge is stated, as are the limitations of convenience sampling, time and financial constraints and selection bias. The chapter then concluded with the planned data analysis and the justification for the selected analysis of descriptive and multi-factorial ANOVA for this study.
CHAPTER IV

Results

This chapter presents the findings of this research study. The sample demographics are described in both narrative and graphical formats. The results related to the three research questions examining geriatric patient satisfaction levels with medication information are discussed. The chapter concludes with a summary of all of the results.

Sample

The sample of study participants was recruited from two hospital inpatient sites on one of five different medical/surgical units over a period of 6 weeks. One site was a medium sized university hospital setting in the Midwest, and the second site was a smaller community hospital in a nearby rural college town. Nursing staff at both sites obtained consent from individuals for the researcher to describe the study prior to the invitation to participate. Identified patients who met the inclusion criteria of being 65 years and older, alert and oriented during the current hospitalization, and going home on at least one prescription medication were approached by the researcher prior to being discharged to home. Once discharged, participants were called by the researcher on the telephone within 7 days. Completion of both data collection sheets and the Satisfaction with Information about Medicines Scale (SIMS) was done in that telephone call.

Fifty-seven individuals were approached by the researcher and 8 of those declined to participate in the study. Three of the remaining 49 individuals who agreed to participate were not available by telephone post-discharge, and 2 more individuals
changed their mind about participating when contacted by the researcher. Of the remaining 44 individuals who agreed to participate, 8 were unable to do so because they no longer met the inclusion criteria of being discharged to their home. They had unanticipated discharges to someplace other than home, such as a long term care facility or assisted living facility. The remaining 36 individuals completed the post-discharge telephone call and make up the study sample. Approximately half of the sample came from each site with 19 individuals from the larger university setting (n=19, 53%) and 17 from the smaller community hospital (n=17, 47%). The demographic characteristics of the sample are presented in Table 1.
<table>
<thead>
<tr>
<th>Demographic Characteristics of the Sample (N = 36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
</tr>
<tr>
<td>Caucasian</td>
</tr>
<tr>
<td>African American</td>
</tr>
<tr>
<td>Hispanic</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
</tr>
<tr>
<td>Married</td>
</tr>
<tr>
<td>Single</td>
</tr>
<tr>
<td>Widowed</td>
</tr>
<tr>
<td>Divorced</td>
</tr>
<tr>
<td><strong>Living Arrangement</strong></td>
</tr>
<tr>
<td>With Spouse or Significant Other</td>
</tr>
<tr>
<td>With Child or Other Relative</td>
</tr>
<tr>
<td>Alone</td>
</tr>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td>65 to 72 years</td>
</tr>
<tr>
<td>73 to 81 years</td>
</tr>
<tr>
<td>82 to 90 years</td>
</tr>
</tbody>
</table>
Gender was equally distributed in the sample with half of the sample being male (n=18, 50%) and the remaining half female participants (n=18, 50%). The majority of the sample was Caucasian (n=32, 89%) with African American (n=2, 5.5%) and the designation of “Other” (n=2, 5.5%) making up the remainder of the sample.

The sample was mostly married (n=23, 64%) or widowed (n=10, 28%) with two divorced (5.5%) and one single (3%) participant. The participants identified whether they lived alone or if they lived with someone else and with whom they lived. More than half of the sample reported they lived with their spouse or significant other (n=20, 56%). The remaining participants reported living alone (n=12, 33%) or they lived with a child or other relative (n=4, 11%).

The age of the sample ranged from 65 to 90 years. The mean age of the sample was 76.17 years (SD=6.41). More than half of the participants were within the 73 to 81 year range (n=22, 61%). The remainder of the sample was divided between the 65 to 72 year range (n=9, 25%) and the 82 to 90 year range (n=5, 14%).

Participants also were asked about the type of medication education they received, whether a support person was present at time of medication education, and the incidence of prior difficulties with medications. Descriptive information about medication use in the sample is presented in Table 2.
Table 2

*Descriptive Information about Medication Use in the Sample (N=36)*

<table>
<thead>
<tr>
<th>Medication Use</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Prior difficulty with medication?</td>
<td>14</td>
<td>38.9</td>
</tr>
<tr>
<td>Support person present during medication teaching?</td>
<td>23</td>
<td>63.9</td>
</tr>
<tr>
<td>Change in medications with discharge?</td>
<td>25</td>
<td>69.5</td>
</tr>
<tr>
<td>One or more new prescriptions?</td>
<td>17</td>
<td>47.2</td>
</tr>
<tr>
<td>Change in dose or frequency of medication?</td>
<td>6</td>
<td>16.7</td>
</tr>
<tr>
<td>Both a new prescription and a change?</td>
<td>2</td>
<td>5.6</td>
</tr>
</tbody>
</table>

Prior difficulty with prescription medications was assessed with a yes or no answer option. A majority of the sample (n=22, 61%) reported no prior difficulty with prescription medications. The remainder (n=14, 39%) responded yes when asked about prior difficulty with prescription medications.

Participants also were asked if there was a support person present during medication teaching at the hospital. More than half of the sample (n=23, 64%) reported having a support person present during medication teaching.

About half of the sample (n=17, 47%) was discharged with one or more new prescription medications. No changes or new medications were reported by approximately one-third of the sample (n=11, 30%). The remaining participants were divided between those who had both a new prescription medication and changes in prior
medications (n=2, 5%), and those who had a change in dose or frequency of an existing medication (n=6, 16%) at discharge.

Most participants reported (n=29, 80%) that they received both verbal and written forms of medication information prior to discharge from the hospital. The remaining participants reported receiving either only written (n=5, 13%) or only verbal information (n=2, 5%) about their medications. Participants also reported the current number of prescription medications and the range was from 2 to 15. The median was 6 prescription medications with a mean of 7.1 (SD=3.40).

Findings

The Satisfaction with Information about Medicines Scale (SIMS) has 17 items and a possible range of scores from 0 to 17. The lower scores represent low overall satisfaction and the higher scores represent high overall satisfaction with information about medication received prior to discharge from the hospital. The two subscales, information about action and usage (9 items) and potential problems of medications (8 items) also are scored in the same direction, with low scores indicating low satisfaction and higher scores indicating higher satisfaction levels. The possible score in the action and usage subscale ranges from 0 to 9 and on the potential problem subscale from 0 to 8.

Participants answered each of the items on the SIMS with one of the following five responses about the medication information received prior to discharge from the hospital: too much information, too little information, just the right amount of information, no information received, or no information was needed. Responses of none needed and just the right amounts were scored with a 1. The three remaining choices, too
much information, too little information and none received were all scored with a 0. The scores on each item then were added to obtain both the overall satisfaction levels and the two sub-scale satisfaction levels. The frequency data about the reported satisfaction levels with the individual items on the SIMS scale is presented in Table 3.
Table 3

*Frequency Data for SIMS Scale Items*

<table>
<thead>
<tr>
<th>SIMS Item</th>
<th>Less Satisfied</th>
<th>More Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Score=0)</td>
<td>(Score=1)</td>
</tr>
<tr>
<td></td>
<td>N (%)</td>
<td>N (%)</td>
</tr>
<tr>
<td>Action and Usage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.  What your medicines are called</td>
<td>14 (38.9)</td>
<td>22 (61.1)</td>
</tr>
<tr>
<td>2.  What your medicines are for</td>
<td>15 (41.7)</td>
<td>21 (58.3)</td>
</tr>
<tr>
<td>3.  What they do</td>
<td>17 (47.2)</td>
<td>19 (52.8)</td>
</tr>
<tr>
<td>4.  How they work</td>
<td>18 (50.0)</td>
<td>18 (50.0)</td>
</tr>
<tr>
<td>5.  How long they will take to act</td>
<td>26 (72.2)</td>
<td>10 (27.8)</td>
</tr>
<tr>
<td>6.  How you can tell if they are working</td>
<td>25 (69.4)</td>
<td>11 (30.6)</td>
</tr>
<tr>
<td>7.  How long you will need to be on the medicine</td>
<td>19 (52.8)</td>
<td>17 (47.2)</td>
</tr>
<tr>
<td>8.  How to use your medicine</td>
<td>19 (52.8)</td>
<td>17 (47.2)</td>
</tr>
<tr>
<td>9.  How to get a further supply</td>
<td>21 (58.3)</td>
<td>15 (41.7)</td>
</tr>
<tr>
<td>Potential Problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Whether the medicine has any unwanted effects (side effects)</td>
<td>25 (69.4)</td>
<td>11 (30.6)</td>
</tr>
<tr>
<td>11. What are the risks of you getting side effects</td>
<td>27 (75.0)</td>
<td>9 (25.0)</td>
</tr>
<tr>
<td>12. What you should do if you experience unwanted side effects</td>
<td>25 (69.4)</td>
<td>11 (30.6)</td>
</tr>
<tr>
<td>13. Whether you can drink alcohol while taking these medicines</td>
<td>11 (30.6)</td>
<td>25 (69.4)</td>
</tr>
<tr>
<td>14. Whether the medicine interferes with other medicines</td>
<td>24 (66.7)</td>
<td>12 (33.3)</td>
</tr>
<tr>
<td>15. Whether the medication will make you feel drowsy</td>
<td>18 (50.0)</td>
<td>18 (50.0)</td>
</tr>
<tr>
<td>16. Whether the medication will affect your sex life</td>
<td>18 (50.0)</td>
<td>18 (50.0)</td>
</tr>
<tr>
<td>17. What you should do if you forget to take a dose</td>
<td>21 (58.3)</td>
<td>15 (41.7)</td>
</tr>
</tbody>
</table>
No participants reported that they received too much information in response to any item. The highest percentages of just the right amount of information or no information needed were seen for the name of medication (61%), what the medicines are for (58%), and whether the participant can drink alcohol with their medicine (69%). The highest percentages of no information received or too little information received were seen in items regarding how long the medicine takes to act (72%) and how the participant will know the medicine is working (69%). The three items asking about satisfaction with information received about side effects of medication also received higher percentages of less satisfied responses (69%, 75%, and 69%, respectively). In addition, the item regarding information received about medication interfering with other medicines also had a higher percentage of less satisfied responses (66%). The remaining item responses are more evenly divided with approximately half of the sample indicating less satisfaction and the other half indicating more satisfaction with the information described in those items.

The first research question asked was, “What is the satisfaction level of geriatric patients with the information about medications provided at discharge?” The total SIMS score means and standard deviations along with both the action and usage sub-scale and the potential problems subscale means and standard deviations for both hospital site and gender are presented in Table 4.
**Table 4**

*SIMS Scale Score by Hospital Site*

<table>
<thead>
<tr>
<th>Scale Scores</th>
<th>Total Sample</th>
<th>Community Hospital</th>
<th>University Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=36</td>
<td>N=17</td>
<td>N=19</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Total SIMS Scale</td>
<td>7.47</td>
<td>4.59</td>
<td>7.06</td>
</tr>
<tr>
<td>Male</td>
<td>7.50</td>
<td>4.20</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>7.44</td>
<td>5.07</td>
<td></td>
</tr>
<tr>
<td>Action and Usage</td>
<td>4.17</td>
<td>2.93</td>
<td>3.77</td>
</tr>
<tr>
<td>Male</td>
<td>4.28</td>
<td>2.76</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>4.06</td>
<td>3.17</td>
<td></td>
</tr>
<tr>
<td>Potential Problems</td>
<td>3.31</td>
<td>2.21</td>
<td>3.29</td>
</tr>
<tr>
<td>Male</td>
<td>3.22</td>
<td>2.26</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>3.39</td>
<td>2.23</td>
<td></td>
</tr>
</tbody>
</table>

All of the total mean scores demonstrate low overall satisfaction levels with medication information regardless of hospital site or gender. The range of scores for the total SIMS is from 0 to 17, with the lower scores representing low overall satisfaction and the higher score representing high overall satisfaction with information about medication. The two subscales, information about action and usage (items 1-9) with a range from 0 to 9 and the potential problems of medications (items 10-17) with a range of 0-8 also are scored in the same direction, with low scores indicating low satisfaction and higher scores indicating higher satisfaction levels.
The mean total SIMS scores all range from 7 to 8 across both sites and gender which is at or below the midpoint of the scale. The action and usage subscale means vary more between hospital sites with the university hospital site showing a higher mean of 4.52 ($SD=2.97$) compared to 3.77 ($SD=2.93$) at the community hospital out of a possible high score of 9. This also indicates low satisfaction with information about the action usage of medication. Consistently, the potential problem subscale also indicates low satisfaction levels with information provided to the participant prior to discharge. The overall means by gender and hospital site were all below 3.50 which are below the midpoint of the potential problem information sub scale.

Prior to the analysis to answer the second and third research questions, other potential sources of group differences were examined. Independent sample $t$ tests were done to evaluate whether the differences between the total SIMS and both subscale means were significant between genders and hospital sites. With the alpha set at .05 for all of the $t$ tests, the independent $t$ test comparing the total SIMS revealed the difference between the mean score for the men ($M = 7.50, SD = 4.20$) and the mean score for women ($M = 7.44, SD = 5.07$) was not significant [$t(34) = -.04, p = .97$]. The difference between the total SIMS mean score of the community hospital site ($M = 7.06, SD = 3.83$) and the mean score of the university hospital site ($M= 7.84, SD = 5.25$) also was not significant [$t(34) = -.52, p = .61$].

The independent samples $t$ test evaluating the difference between the action and usage subscale means between men ($M = 4.28, SD = 2.76$) and women ($M =4.06, SD = 3.17$) was not significant [$t(34) = -.22, p = .82$]. The difference between the community
hospital site action and usage subscale mean ($M = 3.77, SD = 2.93$) and the university hospital site action and usage subscale mean ($M = 4.52, SD = 2.97$) also was not significant [$t(34) = -.77, p = .44$].

An independent samples $t$ test evaluating the difference between the potential problem subscale means of men ($M = 3.22, SD = 2.26$) and women ($M = 3.39, SD = 2.23$) was not significant [$t(34) = .22, p = .82$]. The difference between the community hospital site potential problem subscale mean ($M = 3.29, SD = 1.53$) and the university hospital site potential problem subscale mean ($M = 3.32, SD = 2.73$) also was not significant [$t(29) = -.03, p = .98$].

The second research question asked if geriatric patients who live alone would demonstrate different mean satisfaction levels from those who do not live alone. The third research question asked if there would be differences in mean satisfaction levels between geriatric patients receiving changes in their prescription medication while hospitalized and those with no changes to their prescription medications while hospitalized. The three categories of changes in medication are participants with new prescription medication, participants with dosing or frequency changes in existing prescription medication, and participants with no new or changed prescription medications. Mean scores of both the total SIMS and the two subscales across these variables are presented in Table 5.
Table 5

*Satisfaction Scores by Selected Demographic Characteristics*

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Total SIMS N = 36</th>
<th>Usage &amp; Action N = 36</th>
<th>Potential Problems N = 36</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M    SD  N</td>
<td>M    SD  N</td>
<td>M    SD  N</td>
</tr>
<tr>
<td>Living Situation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lives Alone</td>
<td>8.67</td>
<td>4.40  12</td>
<td>4.50</td>
</tr>
<tr>
<td>Lives Not Alone</td>
<td>6.87</td>
<td>4.66  24</td>
<td>4.00</td>
</tr>
<tr>
<td>With Spouse or S.O.</td>
<td>6.88</td>
<td>4.86  20</td>
<td>4.05</td>
</tr>
<tr>
<td>With Child or Relative</td>
<td>7.00</td>
<td>4.08  4</td>
<td>3.75</td>
</tr>
<tr>
<td>Changes in Medication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Changes in Medicine</td>
<td>4.73</td>
<td>3.80  11</td>
<td>1.91</td>
</tr>
<tr>
<td>Changes in Medicines</td>
<td>8.68</td>
<td>4.41  25</td>
<td>5.16</td>
</tr>
<tr>
<td>New Prescriptions</td>
<td>8.71</td>
<td>3.39  17</td>
<td>5.23</td>
</tr>
<tr>
<td>Changed Dose/Freq</td>
<td>9.83</td>
<td>7.03  6</td>
<td>5.67</td>
</tr>
<tr>
<td>Both New &amp; Change</td>
<td>5.00</td>
<td>2.83  2</td>
<td>3.00</td>
</tr>
</tbody>
</table>

Total SIMS means between those who live alone ($M = 8.67, SD = 4.40$) are higher than those who do not live alone ($M = 6.87, SD = 4.66$). A similar difference is seen on the potential problem subscale means with those that live alone ($M = 4.17, SD = 2.25$) having a higher mean than those that live with others ($M = 2.87, SD = 2.11$). A consistent but smaller difference also is seen with the action and usage subscale with
those who live alone showing a higher satisfaction rating mean ($M = 4.50, SD = 2.61$) than those who live with others ($M = 4.00, SD = 3.12$).

The level of satisfaction mean on the total SIMS for those who had changes in medication during hospitalization ($M = 8.68, SD = 4.41$) is almost twice as high as the SIMS means of those without changes to their medication ($M = 4.73, SD = 3.80$). Comparable differences are seen between the action and usage subscale means of those with changes in medication information ($M = 5.16, SD = 2.73$) and those with no change in medication information ($M = 1.91, SD = 2.02$). Changes in medication information means ($M = 3.52, SD = 2.24$) on the potential problem subscale also are higher than those with no changes in medication information ($M = 2.82, SD = 2.18$).

The highest SIMS mean score was seen for those participants who received information about a change in dose or frequency of an existing medication ($M = 9.83, SD = 7.03$). A noticeable exception to the higher mean score for those with changes are the 2 participants who had both a new prescription medication and a change in an existing medication ($M = 5.00, SD = 2.83$).

A two-way analysis of variance (ANOVA) was used to compare total SIMS scores, the usage and action sub-scores and the potential problem sub-scores with change in medication information and living situation as the grouping variables. For the purposes of these analyses, the three types of changes in medication information (new prescription medication, change in dose or frequency of existing medication, and both new prescription and change in existing medication) were considered as one category: change in medication information. The second category for change in medication
information was no change in prescription medications. The two levels of living situation included living alone and living with someone else. The means and standard deviations of all satisfaction scores across these factors were presented in Table 5.

The total SIMS score ANOVA revealed no significant interaction between living situation and changes in medication information, \( F(1, 35) = .03, p = .87 \) and no significant main effect for living situation, \( F(1, 35) = 1.32, p = .26 \). There was a significant main effect for changes in medication information, \( F(1, 35) = 6.41, p = .02 \). Approximately 17% of the variance in the total SIMS scores can be attributed to the change in medication information received and is a small effect size. Changes in medication while hospitalized significantly increased overall satisfaction with the information received compared with the satisfaction of those participants who did not have changes in medication.

The Usage and Action Subscale ANOVA also revealed no significant interaction between the two factors of living situation and changes in medication information, \( F(1, 35) = .01, p = .94 \). No significant main effect of living situation, \( F(1, 35) = .38, p = .54 \) was seen. There was a significant main effect for change in medication information, \( F(1, 35) = 11.15, p = .00 \). Approximately 26% of the variance in the Usage and Action subscale was attributed to changes in medication information received and is a medium size effect. Changes in medication while hospitalized significantly increased satisfaction with the action and usage of medication information received compared with the satisfaction of those participants who did not have changes in medication.
The Potential Problems Subscale ANOVA indicated no significant interaction between living situation and changes in medication information, $F(1, 35) = .05, p = .83$. No significant main effect of living situation, $F(1, 35) = 2.28, p = .14$ or of changes in medication information $F(1, 35) = .96, p = .34$ were revealed.

The differences of the overall SIMS means of those participants with some type of change in medications during hospitalization from those without changes appears to be primarily due to the differences in satisfaction with information about action and usage of the medications rather than potential problems information. Satisfaction levels with information about potential problems remained low regardless of changes in medication or living situation.

The ANOVA indicated that receiving a new prescription medication or a change in a pre-existing prescription medication while in the hospital contributes to higher satisfaction levels on both the total SIMS and the Action and Usage sub-scale. Having no changes in prescription medications contributes to lower satisfaction levels in both the total SIMS and the Action and Usage sub-scale. No significant effect on the Potential Problems sub-scale was seen with either living situation or type of medication information.

Summary

The results of this study are presented initially with a description of all obtained demographic variables distribution within the sample. The overall satisfaction levels revealed are low in both the total SIMS and two sub-scales. Findings of the $t$-test indicate no significant differences in satisfaction levels between gender or hospital site.
The ANOVA showed that geriatric patients who had either a new medication or a change in their existing medication had significantly higher satisfaction in both the total SIMS and the action and usage sub-scale. No significant effects were seen on any examined satisfaction levels from living situation.

The participants in the sample revealed that they are not satisfied with the amount of information they received about their medication. Changes in medication while hospitalized are shown to significantly increase satisfaction levels with the information received about action and usage, but not satisfaction with the information received about potential problems of medications.
CHAPTER V

Discussion

This chapter discusses the results related to the satisfaction levels of geriatric patients with the medication information they received while hospitalized. The low overall satisfaction levels and significant effects of changes in medication on satisfaction with information received are examined in context of the existing knowledge base within the literature and as supporting Roy’s theoretical model of human adaptation. The contribution of this study to the limited knowledge about patient satisfaction with medication education and its limitations are presented. Implications to enhance adaptation and improve satisfaction levels in geriatric patients are discussed along with recommendations for future research.

Findings

The first research question asks what is the satisfaction level of geriatric patients with information about medications provided to them prior to discharge? The results of this study revealed low overall satisfaction levels of geriatric patients with the information received about medications and indicates that geriatric patients perceive themselves as being insufficiently informed about their medications. Those participants with changes in medications while hospitalized showed significantly increased levels of satisfaction on both the action and usage subscale and total SIMS than those without changes to their medication. Even considering these differences in mean satisfaction levels with information about medications, overall satisfaction levels remained low. No
increase in the potential problem subscale satisfaction level was seen with new or changed medications while hospitalized.

According to the proposed conceptual model, effective adaptation to taking prescription medications includes taking medication as instructed and as prescribed. Health care providers attempt to manage or influence the focal stimuli of prescription medication through the intervention of medication education. In Roy’s adaptation model, the cognator coping mechanism enables the geriatric patient to process the focal stimuli of prescription medication taking and hospitalization through their perception, information processing, learning, judgment and emotional response pathways (Roy & Andrews, 1999).

Medication education or information that is perceived by the recipient as insufficient or unsatisfactory does not enhance or support effective adaptation. The overall goal of nursing in this model is to provide interventions that enhance an individuals’ effective adaptation. Discharge medication information is provided to patients prior to discharge with a global goal of decreasing ineffective adaptation or decreasing risks of adverse reactions and increasing patient compliance with the medication regime.

Few prior studies measuring geriatric satisfaction with education interventions are available for comparison. Misteaen, Duijnhouwer, Wijkel, DeBont, and Veeger’s (1997) Amsterdam sample of 145 elderly patients commented that information needs were mentioned by 80% of their subjects in a post-discharge study examining problems encountered after discharge from hospitalization. Of those information needs mentioned,
23% were specific questions about medications. Although not specifically examining satisfaction levels, insufficient medication information can be inferred by this study’s report of unmet informational needs.

Ryan and Chambers (2000) also identified insufficient medication information or low satisfaction with standard medication information received in their study evaluating the effectiveness of an individualized education program on geriatric patient prescription medication knowledge. The researchers reported prior to the researcher’s intervention every one of their 15 participants stated they would have liked to have more information about their medicines. Findings of the study showed the individualized education program was able to increase patient knowledge, and post-intervention, the participants reported a very high satisfaction level with the program. Satisfaction levels were obtained through a questionnaire and no further information regarding those findings were available (Ryan & Chambers).

In Lee et al. (1980), a survey examining 206 patients’ education post-discharge by telephone call found that 83 or (40%) of participants needed more specific directions or information such as how or when to take medications. The researchers report that patients perceived their discharge instructions as adequate and yet half of the sample asked for and received additional discharge information. Although not specific to geriatrics or medication information, this study demonstrates the prior pattern of the available literature on satisfaction levels with education interventions.

Much of the reviewed literature revealed findings of inadequate knowledge or information of medications after hospitalization with confounding patient reports of
satisfaction with or adequacy of medication education (Alibhai, Han, & Naglie, 1999; Debrew, Barba, and Tesh, 1998; Driscoll, 2000). The SIMS tool utilized in this current study allows the participant to evaluate the adequacy of specific medication information and translates that into satisfaction level through the specific responses of too much information, just enough information, too little information, none received and or none needed.

In contrast to the low overall satisfaction level with medication information observed in this study, a Canadian study (Alibhai, Han, & Naglie, 1999) examining time spent on discharge medication education provided to older patients, the impact of that intervention on knowledge and satisfaction, and identification of barriers revealed high satisfaction levels in the half of their sample (n=24, N=49) who reported receiving any medication education. A 1-5 point satisfaction scale was used in their study and ranged from not at all satisfied to extremely satisfied with their medication education. The mean satisfaction score of the 14 participants educated by physicians was 3.9 and the mean for the 10 participants educated by a pharmacist was 4.1. Nurse-provided education was not examined in this study and limits its comparability to this study in which nurses provided much of the medication education for the participants.

Low satisfaction with medication education observed in this study also is in contrast to higher satisfaction with all discharge education founds in a qualitative Australian study by Driscoll (2000), who explored patient and family caregiver perceptions of, adequacy of, and utilization of information received while hospitalized. Although not medication information or geriatric specific, the mean age of subjects was
73 years in the convenience sample of 40 pairs of patients and their caregivers. More participants and caregivers reported receiving information and were satisfied with that information than in other studies reviewed (Alibhai, Han, and Naglie, 1999; Holloway, 1996; Mistiaen, Duijnhouwer, Wijkel, DeBont, and Veeger, 1997; Tierney, Worth, Closs, King, and Macmillan, 1994). Both qualitative and quantitative questionnaires were used to obtain satisfaction levels with all information received of both patients and caregivers. Comparisons of these results to this study are challenging because of the inclusion of caregivers and all discharge information being included in the study.

The second research question asked if living alone or with others significantly affects geriatric patient satisfaction levels. This study failed to demonstrate any difference in mean satisfaction levels between those who lived alone and those who lived with others. The conceptual framework of this study would consider living situation contextual stimuli and part of the individual’s internal environment. Although this study did not reveal any significant affect on satisfaction levels it is probable that this contextual stimuli does affect adaptation. No other studies were found that examined this variables effect on satisfaction levels for comparison.

The third research question asked if having a change in medications while hospitalized, such as a new prescription or a change in dose or frequency of an existing medication, would have a significant affect on satisfaction levels. This study demonstrated increased mean satisfaction levels in patients with changes that are consistent with Martens (1998) ethnographic study examining the process of medication discharge education. Martens study also demonstrated that those with new medications,
those on anticoagulants and those who asked a lot of questions received more medication information than those on the same medications or those without changes to their medications 1998).

Alibhai, Han, and Naglie, (1999) noted in their study examining medication education of geriatric patients during hospitalization that approximately half 24 out of 49 subjects reported receiving no education although most of the sample had changes in medications. Their higher satisfaction ratings may reflect that only those who reported receiving information rated satisfaction with that medication information. Comparatively, in this satisfaction study all participants reported satisfaction levels including those who reported receiving no medication information.

Low satisfaction or adequacy of medication information is seen also by DeBrew, Barba, and Tesh, (1998) in their development of a medication knowledge and practice assessment tool for older adults (n =20). They also found that one of the greatest knowledge deficits in this population was regarding medication administration, action, and side effects for medications that had been prescribed during a recent hospitalization. They also found that a deficit of knowledge about side effects for medications older adults had been on for years was also noted (DeBrew et al., 1998).

The findings of low overall satisfaction levels with medication information for geriatric patients who have been hospitalized are consistent with the available literature on the subject. Geriatric patients are not getting sufficient amounts of information about their medicines and are not satisfied. Participants who received new prescription medications or changes in medications got a little more information and reported higher
satisfaction levels than those without changes. The increase in satisfaction levels was primarily seen in the action and usage subscale items and in turn increased the total SIMS ratings. Low satisfaction with the potential problems subscale is seen with all participants whether they had new, changes or no changes to their medications.

*Theoretical Implications*

Geriatric hospitalized patients report low satisfaction with the information about medications they received prior to discharge. These findings are disturbing because geriatric patients have overall increased risk of adverse reactions to prescription medications post-hospitalization. The total SIMS and both the action and usage and potential problem subscale revealed low satisfaction levels among geriatric patients.

The potential problem subscale of the SIMS asks specific questions about information received about medication’s risks of side effects, what to do if side effects occur, interactions with other medicines, drowsiness, whether you can drink alcohol with the medicine, sexual side effects and what to do if you miss a dose. Low satisfaction with these particular aspects of information about medication in geriatric patients may contribute to ineffective adaptation. Medication information is provided to assist patients in their adaptation to taking prescription medication. High satisfaction with medication information would theoretically enhance the geriatric patient’s adaptation through the perception of themselves, being sufficiently informed about their medications, so that they demonstrate positive behaviors towards medication taking and free up energy for attending to other stimuli (Roy & Andrews, 1999).
The goal of medication teaching is to promote and support the geriatric patient’s cognator coping system and assist with effective adaptation to taking prescription medications. This coping mechanism includes the individuals’ emotional response, learning, judgment, information processing and perception. All of these cognator dimensions may be negatively impacted by low satisfaction levels. Decreasing risks of adverse effects and promoting safety with prescription medication taking in this population is a priority and this study suggest that current education interventions provided to geriatric patients while hospitalized are not adequate or satisfying to these patients.

Limitations

Limitations of the study include selection bias of patients who were willing to participate not representing the target population, and being more highly motivated to learn about their medications. Most of the sample (89%) were Caucasian and may not reflect more diverse populations of geriatric patients. Additional limitations of this study are the inability to include or identify all of the confounding variables, such as contextual and residual stimuli (Roy, 1984; Roy & Andrews, 1999), which elders are confronted with at the time of discharge. These may include the type or severity of illness, previous experiences with health care and or providers, cultural influences, pain, fear, fatigue, anxiety, expectations, and socioeconomic concerns.

Implications for Nursing

With increased risks to this population for adverse effects of prescription medications especially after hospitalization, alteration of the standard discharge
medication education is warranted for geriatric patients. Assessment of what patients already know and what they want to know about their medication is recommended. Patients without changes to their medications had lower satisfaction levels and received less information about action and usage of their medications. Those prescribing medication and those discharging patients need to provide sufficient information about both action and usage of each medication and potential problems of each medication for all geriatric patients. Minimally, patients should receive adequate information on the name, action and safe usage, potential side effects, interactions, and instructions on what to do if problems or issues arise.

Prior research indicates that geriatric patients report adequacy or satisfaction with medication teaching even when they have unmet informational needs about medications (Alibhai, Han, and Naglie, 1999, Schmidt 2003). Alibhai et al., (1999) inferred that maybe geriatric patients are hesitant to criticize the providers of care. If this population tends to over estimate their satisfaction with medication information provided to them, then this study’s low satisfaction levels may imply even more serious deficits in the medication information they received.

Geriatric patient perspective of current education interventions has not been well examined in the literature. Compliance, knowledge and adherence to prescriptions medications have been the primary outcome examined in relationship to education interventions. Consideration of the patients’ perspective seems to be needed. This study’s goal was to provide a description of geriatric patient satisfaction levels and
identify influential factors such as new or changed medications as having a significant
effect on satisfaction levels.

Recommendation for Further Research

Larger studies in this population using the SIMS tool are recommended. Follow
up studies examining the relationship of patient satisfaction and outcomes such as re-
hospitalizations and or occurrences of adverse drug reactions are needed. Comparisons
of SIMS between geriatric patients who have new or changed medication in the
outpatient setting to those who have changes while hospitalized would be useful in
determining if setting contributes to low satisfaction levels or outcomes. Qualitative
studies examining the geriatric patient holistic perspective of medication use and
education with diverse populations also is recommended to lay a foundation for the
development of improved processes to support and assist adaptation to prescription
medication usage in this population.

Summary

This study’s findings that geriatric patients are not satisfied with the information
they receive about their prescription medications agrees with some and conflicts with
other available research examining geriatric satisfaction with medication educative
interventions. Inconsistency in satisfaction level measurement tools and design of prior
research makes comparisons difficult. A small non-diverse sample was identified as a
limitation.

The only variable identified in this study as able to significantly increase
satisfaction levels was changes in medication during hospitalization. This increase in
satisfaction level was modest and was only seen with the action and usage information satisfaction. Exploration of differences in medication education between those with changes and those without is recommended. Low satisfaction with information about potential problems of medications was seen across all examined variables. The low reported satisfaction with information about potential problems is concerning because of geriatric patients increased risk of adverse drug reactions and re-hospitalizations.

Changes are needed for the goal of effective adaptation to prescription medication in geriatric population to be achieved. Qualitative studies examining geriatric patient experience of prescription medication use are recommended to add to the limited knowledge of the patient perspective to prescription medication treatments. Further research relating satisfaction levels to outcomes such as re-hospitalization and/or adverse drug reactions are warranted.

Increasing satisfaction levels and supporting and promoting effective adaptation to the use of prescription medication should be a priority to all health care providers who care for geriatric patients. Economic and social obligations require that we identify evidence based ways to achieve these goals because current discharge medication educative interventions are not demonstrating effectiveness. This study adds to the newly growing body of knowledge about geriatric patients experience with medication education.
REFERENCES


APPENDIX A

Participant Data Collection Form

__________ Age

__________ Gender:
1. Female
2. Male

__________ Ethnicity:
1. African American
2. Caucasian
3. Hispanic
4. Other

__________ Current marital status:
1. Married
2. Single
3. Widowed
4. Divorced

__________ Do you live with someone or alone?
A. alone
B. with someone else if with someone else, is it?
   1. Spouse or significant other
   2. Child or other relative
   3. Friend or other

__________ How many prescription medications are you taking?

__________ Have you ever had any difficulty taking prescription medications?
1. Yes,
2. No

__________ Did you receive spoken (verbal) and or printed medication information?
1. verbal
2. written or printed
3. combination of both

__________ Did you receive any new prescription medications and or instructions to change anything with your existing medications during this hospitalization?
1. No change in any prescription medicines
2. One or more new prescriptions
3. Change in dose or frequency of an existing prescription medication

__________ Was any family member or support person present when medication teaching was done?
1. yes
2. no
APPENDIX B

Satisfaction with Information about Medicines Scale

I would like to ask you about the information (teaching) you have received about your prescription medicine during your recent hospitalization.

*Please rate the information you have received about each of the following aspects of your medicines. If you use more than one medicine, please give your overall feeling about information you have received about all your medicines.*

*Ratings: too much information, about the right amount of information, too little information, none received, none needed*

<table>
<thead>
<tr>
<th></th>
<th>Too much</th>
<th>about right</th>
<th>Too little</th>
<th>None received</th>
<th>None needed</th>
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</thead>
<tbody>
<tr>
<td>1. What your medicines are called</td>
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<tr>
<td>2. What your medicines are for</td>
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<td>3. What they do.</td>
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<td>4. How they work.</td>
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<td>5. How long they will take to act</td>
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<td>6. How you can tell if they are working</td>
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<td>7. How long you will need to be on the medicine</td>
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<td>8. How to use your medicine</td>
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<td>9. How to get a further supply.</td>
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<tr>
<td>10. Whether the medicine has any unwanted effects (side effects)</td>
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<tr>
<td>11. What are the risks of you getting side effects</td>
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<tr>
<td>12. What you should do if you experience unwanted side effects</td>
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<tr>
<td>13. Whether you can drink alcohol while taking these medicines</td>
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<td>14. Whether the medicine interferes with other medicines</td>
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<tr>
<td>15. Whether the medication will make you feel drowsy</td>
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<tr>
<td>16. Whether the medication will affect your sex life</td>
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<tr>
<td>17. What you should do if you forget to take a dose</td>
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</table>

Satisfaction with Information about Medicines Scale © Robert Horne 2001
APPENDIX C

Telephone Call Script

Hello, is ___________________ there?  Hi, this is Veronica Walters; I am the RN/MUO Graduate student who contacted you, during your recent hospitalization at __________ about participating in a study, examining elders’ satisfaction level with medication information.  The questionnaire will take about 10 to 15 minutes to complete.  Are you able to answer the questions now? ________  If NO- When would be a better time for me to call you back _______If participant no longer wishes to participate in study request for reason would be recorded here_________.

If YES- First I am going to ask you a few general questions about yourself then some specific questions about your medication.  Then I will ask you the satisfaction questions about the medication teaching you received from the hospital before discharge.

**Ask the participant data questions.**

I will list the responses you will be using, to answer these questions.  You can write them down if you would like, to make the responses easier to remember.  Do you want to write them down? ________

Okay, each statement or question about medication information you received, is answered by one of these five responses, I received either;

- Too much information
- about right amount of information
- too little information
- none received (no information)
- none needed

**Then Administer the SIMS tool**

Do you have any concerns or questions?  Refer participants with concerns and or questions about medications to their primary care provider and instruct them to call PCP after they hang up with researcher or call local Emergency Department with urgent needs.

Thank you for your participation in this study, Goodbye.
ABSTRACT

This study examined satisfaction levels of geriatric patients with the medication information they received during a recent hospitalization and identified potential effects of living situation and changes in medications on those levels. A non-randomized convenience sample of 36 geriatric patients was recruited from two hospital sites for this descriptive study. A post-discharge telephone call at 1-7 days was used to obtain both participant demographic data and to administer the Satisfaction with Information about Medications Scale (SIMS).

Low overall mean satisfaction levels were seen in the total SIMS score and in both sub-scales. Mean satisfaction levels were significantly higher in those with changes in medications during hospitalization. Approximately 17% of the variance in the total SIMS scores can be attributed to changes in medications during hospitalization. Higher scores were seen in the Action and Usage subscale with changes in medications but were not demonstrated in the Potential Problem subscale.