Medication Reconciliation: Exploring the Ability of Older Adults to Articulate Their Medication Accurately
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This paper was written for the Nursing Department of LaGrange College.

Abstract
Purpose: The aim of this descriptive research study was to explore the ability of older adults to articulate their medication regimens accurately.
Summary: The research team completed a literature review which revealed that medication mismanagement and adverse medication events are a leading cause of hospitalizations. The review also indicated that medication information that is miscommunicated to medical personnel when seeking medical care may be responsible for as many as 50% of reported medication errors.

Framework: The theoretical framework used for this study was based on Shearer’s Health Empowerment Intervention (2010).
The Survey Tool: The tool used to collect the research data was a modified version of the Medication Knowledge Survey (MKS) which is available online for public use.

Data Collection and Setting: The data was collected in a senior center located in West Georgia. A sample of 35 participants was surveyed for this study using a non-probability convenience sampling method.

Results: Of the 35 participants, 11 were male and 24 were female. Forty percent of the participants were 81 years of age or older, 46% were 71-80 years of age, and 14% were 61-70 years of age. Twenty two percent of the participants provided a written list that included the medication name and frequency taken. Twenty two percent were able to recite their medication regimens from memory, while 40% of the participants knew the purpose / indications of the medication being taken. Female participants were more knowledgeable about medications with 25% having a complete list of medications which included name, dosage, and frequency, 25% recited a complete medication list from memory, 46% knew the indication of their medications even though they could not recite the medication name or dosage, and 4% knew their medication only by the number of pills they took per day. On the other hand, the male participant data revealed that 18% had a complete list of medications which included the
name, dosage, and frequency, 18% recited a complete medication list from memory, 37% knew the indication of their medications even though they could not recite the medication name or dosage, and 27% knew their medication only by the number of pills they took per day.

Practice Implications: These low percentages indicated that older adults only have partial knowledge of their medication regimens resulting in the inability to communicate to healthcare providers an adequate medication list. There is a definite need for improvement in education methods used by healthcare providers, as the current education methods are not effective, therefore further research in medication education is indicated.

**Research Background**

Medication reconciliation is an on-going challenge for patients and healthcare providers. This is especially true for the older patient who may have multiple medications from multiple providers for chronic health problems. The Institute for Healthcare Improvement (2004) and The Joint Commission (2005) both identified that the lack of an accurate medication record on admission to a healthcare facility can lead to adverse medication events including death. There are several variables which include poly-pharmacy, multiple providers, cognitive loss and many others that lead to older adults not being able to articulate their medication lists accurately across the continuum of healthcare.

**Study Problem**

The healthcare community has identified that there is a definite need for improvement in the process of medication reconciliation. There has been minimal research in assessing the patient’s ability to articulate an accurate medication list. The inability of a patient to be able to articulate his or her medication regimen accurately to healthcare providers can lead to adverse medication events that can then lead to re-hospitalizations, extended hospital stay and possibly death. This is a problem across many healthcare settings.

**Review of Literature**

A literature review was conducted to determine possible barriers that prevent patients from being able to accurately articulate their medication regimens. The articles reviewed were from the database of CINAHL using keywords of medication reconciliation, knowledge deficit and medication management. Patients commonly have a primary care physician who manages day to day medications. They may also be under the care of a specialist who provides medications. Patients may turn to non-traditional remedies such as herbal supplements or medications that are advertised over the internet or other places allowing them to order medications without a prescription. The numerous options that are available for patients add to the confusion of medication reconciliation.
The Institute for Healthcare Improvement (IHI) initiated the 100,000 Lives Campaign in 2004 which included six interventions to reduce preventable deaths in US hospitals. The third intervention was medication reconciliation which the IHI defined as the process of creating the most accurate list possible of all medications that a patient is taking – including the name, dosage, frequency and route – and comparing that list to physician orders as the patient travels throughout the healthcare continuum. The Joint Commission also added this initiative as a National Patient Safety Goal in 2005. Their guidelines allow information gathered from caregivers in an attempt to get the most accurate medication list when a patient is admitted to any healthcare setting. In a descriptive study by Riley-Lawless (2008) the researcher identified that there are multiple barriers to obtain accurate medication lists from patients and there is a need to do further research to seek interventions for improvement.

Medication errors and adverse drug events have had a detrimental impact on health care as a whole. In 2000, the Institute of Medicine released their landmark report entitled, To Err is Human: Building a Better Healthcare System, in which medication errors were identified as the leading cause of morbidity and mortality in our hospitals to date (Riley, 2009). According to the Institute for Healthcare, “poorly communicated medical information at admission and other healthcare transition points is responsible for as many as 50% of all medication errors in hospitals” (Manno & Hayes, 2006). A review of literature has indicated many variables that affect the medication reconciliation process especially in elderly patients. Patients aged 65 and older are more likely to experience chronic illnesses which tend to lead to multiple prescriptions that make this group of patients at higher risk for incorrect medication management and medication adverse reactions (Loughran 1996). In a study done by Griffith, Johnson, Piper, and Langdon in 2004, the researchers used a pre-post test design with a cross sectional survey to determine an educational pathway geared towards medication instruction to increase medication knowledge. The study revealed that systematic teaching of medications by nurses does decrease the potential for adverse events in medication management.

In conclusion, all of the studies reviewed showed that communication between healthcare providers and medication education provided by an interdisciplinary team to patients was essential to prevent adverse medication events and ensure an accurate medication list. Also, developing a systematic approach for medication education, including forms that could possibly be used universally between healthcare providers, could facilitate accuracy. Further research on medication reconciliation is needed to determine the best possible practices that could be implemented to correct this issue and thus prevent avoidable adverse medication events.
Research Purpose
The purpose of this descriptive study was to determine the accuracy of the older patient in articulating a complete medication list. This list included the name of the medication, the route, the dose and the frequency a medication was to be taken.

Theoretical Framework
The theoretical framework used in this study was based on Shearer’s Health Empowerment Intervention (2010). The aim of this framework as described by Shearer was that it “focuses on purposeful participation in individualized goal attainment by incorporating a focus on the older adult’s concerns and preferences in determining health goals.” This framework was appropriate for this study because the researchers were evaluating the older population’s knowledge of their own medications as this is necessary in maintaining and promoting one’s health.

Research Questions:
(1) Can the older adult population completely and accurately articulate (list) home medication regimens including prescription and non-prescription medications, vitamins, and herbal supplements?
(2) Does gender play a role in the ability to accurately list home medications?

Design
The design used for this study was descriptive. This design was appropriate for this study in that it was aimed at trying to explore how well older adults could articulate their medications accurately and completely.

Setting and Sample Characteristics
The data was collected in a senior center located in West Georgia. The target population was active older adults who came to the community senior center for age appropriate activities. The sampling criteria was nonexclusive to gender, ethnic background, and/or level of education. The inclusion criteria consisted of adults who were: (1) 60 years or older, (2) able to speak English, and (3) taking three or more medications in a day. No power analysis of the sample size was performed. A non-probability convenience sample of 35 subjects was used for this study.

**Measurement Methods**

The measurement instrument used in this study was the Personal Medication Knowledge Survey (See Appendix), which was a modified version of Medication Knowledge Survey (MKS). The MKS tool was available online for public use. The tool was modified to include the demographic data; age, gender, educational level, and ethnic background. This tool was used to analyze how well the participants knew their medications.

**Data Collection**

The researchers collected the data from the participants using the Personal Medication Knowledge Survey form at a senior center in West Georgia. The researchers asked the participants which medications they were taking and recorded the information given on the data collection form developed for this study (See Appendix 2B). To decrease the probability of receiving multiple surveys from the same participants, a notice was added to the survey that informed the participants not to complete duplicate surveys.

**Storing, Retrieval, and Analyzing Data**

All surveys and information pertaining to confidentiality of participants were kept secured in the Nursing Department of LaGrange College. Only researchers and the nursing professor had access to the information. Researchers conducted the research on site and received the completed surveys in person. Researchers took part in analyzing data using descriptive statistics. The data analyzed included: the percentage of participants according to their ages; and the percentage of participants related to how well they knew their medication. All participant information and surveys were shredded at the end of the study. All data was presented in aggregate form to ensure individual participants were not identified.

**Ethical Considerations**

Permission to conduct the study was obtained from Lagrange College Institutional Review Board. In addition, written approval was obtained from the senior center located in West Georgia. Participants were provided with essential information for informed consent and the consent to voluntarily participate in the study was implied by the participants completing the survey (see Appendix).

**Results**
The total number of active older adults surveyed was 35. Of the 35 participants, 40% of the participants were 81 years of age or older, 46% were 71-80 years of age and 14% were 61-70 years of age. Findings also showed that, 22% of the participants provided a written list that included the medication name and frequency taken, 22% were able to recite their medication regimen from memory, and 40% of the participants knew the purpose / indications of the medication being taken. Findings also showed that female participants were more knowledge about their medication than men. Of the 24 female participants, 25% had a list of their medications which included the name, dosage, and frequency, 25% were able to recite their medication, dosage and frequency from the memory, 46% knew the indication of their medications even though they could not recite the medication name or dosage, and 4% knew only the number of pills they took per day. On the other hand, of the 11 male participants surveyed, 18% had a list of their medications which included the name, dosage, and frequency, 18% were able to recite their medication, dosage and frequency from the memory, 37% knew the indication of their medications even though they could not recite the medication name or dosage, and 27% knew only the number of pills they took per day.

**Conclusion:**
Medication reconciliation is an ongoing challenge for older adults and healthcare providers. Based on former research, many people are unaware of the need to have a complete and accurate list essential to prevent adverse medication events and ensure an accurate medication list which includes the name of the medication, dosage, and indication of why they are taking the medication. In this study, the researchers found that, low percentages indicated that older adults only have partial knowledge of their medication regimens resulting in the inability to communicate to healthcare providers an adequate medication list. Therefore, there is a greater need to have a medication list at all times as the current education methods are not effective, indicating the need for further research in medication education.
References


