The Effects of Age, Cognition, and Health Literacy on Use of a Patient Electronic Medical Record

Principal Investigator: Taha, Jessica R., M.S.
Organization: University of Miami
Mechanism: PAR: HS06-118: AHRQ Grants for Health Services Research Dissertation (R36)
Grant Number: R36 HS 018239
Project Period: September 2009 – November 2011, Including No-Cost Extension
AHRQ Funding Amount: $37,800
Summary Status as of: December 2010

Target Population: Adults, Elderly*, Low Literacy

Summary: The use of patient portals of electronic medical records (EMRs) is expanding as patient involvement in disease prevention, management, and decisionmaking is emphasized in the health care system. To date, there has been little usability testing of patient portals, especially with older adult populations. This study will systematically assess the ability of older adults to use the patient portal of an EMR to perform health management tasks and examine how individual characteristics, such as health literacy and cognitive abilities, impact the use of such systems.

Participants will include individuals aged 40-to-85 years with low and high health-literacy levels, as measured by the Test of Functional Health Literacy in Adults (TOFHLA). The specific focus will be on three common health management tasks associated with patient portals: 1) medication management; 2) interpreting laboratory test results; and 3) health maintenance activities. By systematically assessing the relationship between individual characteristics and the ability to use a patient portal of an EMR system, the study will identify the root of usability problems and develop empirically-based interventions to help those who are most likely to face problems interacting with these systems. At the same time, this research should increase the general usability of these systems, which will ultimately benefit all patient populations.

Participants will be given a background questionnaire to gather data including gender, age, ethnicity, educational level, income, health information, medication use, experience with technology, and cognitive battery tests. Participants will also be given the TOFHLA and subjective and objective numeracy tests. Basic information will be provided on how to navigate the EMR record and view its information. Each participant will then use the portal to perform the three aforementioned types of health-related tasks. Following the completion of the tasks, participants will be asked to complete a portal usability questionnaire. At the completion of data collection, brief interviews will be conducted with each participant to get additional feedback on use of the patient portal.

Specific Aims:

- Examine the ability of middle-aged and older adults to use a patient portal of an EMR to perform common health management tasks. **(Ongoing)**
- Examine the relationships between individual characteristics such as age, cognitive abilities, health

literacy, and task performance. **(Ongoing)**

- Identify usability problems inherent in the use of patient portals and identify design solutions. **(Ongoing)**

2010 Activities: All tool development was completed and all forms were tested and revised. Cognitive tests were identified and modified. The Web site, which mimics a patient portal, was created and tested. Recruitment was initiated and 95 people had been recruited by the end of the year. Sixty-one people have come in for the required two days. Of the 61, only one participant has been lost to followup.

Grantee's Most Recent Self-Reported Quarterly Status (as of December 2010): The project is meeting most of its aims on time. Budget spending is roughly on target.

Preliminary Impact and Findings: The project does not have any findings to date.

Strategic Goal: Develop and disseminate health IT evidence and evidence-based tools to support patient-centered care, the coordination of care across transitions in care settings, and the use of electronic exchange of health information to improve quality of care.

Business Goal: Knowledge Creation

---

* *AHRQ Priority Population*