Development of an Interactive Tailored Information Application to Improve Patient Medication Adherence

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Abstract
Medication adherence is increasingly recognized as an important health care problem. Although various factors have been related to adherence, patients' understanding of their illness and the influence of treatment on it has been shown to affect treatment adherence. Individually tailoring information provided to patients has a greater impact on patient behavior than providing generic information. This paper details the development of an interactive software application that provides individually-tailored information to patients treated with cholinesterase inhibitor medications for memory disorders. The application allows clinician input of information on patient level of health literacy and allows patients to choose among multiple questions related to their illness and its treatment. Output then includes answers to questions in Spanish and English at low or high literacy levels. Pilot data show a high degree of acceptability to users and an association with high sustained levels of adherence.

Keywords: geriatric, Internet, World Wide Web, medication adherence, cholinesterase inhibitor, memory disorders

Introduction

Medication adherence is increasingly recognized as a concern in clinical treatment. The report on medical errors of the Institute of Medicine identified, for example, medication nonadherence as an important source of medical errors. One method that has been used to improve medication adherence is to provide patients information about the nature of their illness and the likely effect of treatment. Studies have shown that information provided to patients that is tailored to their specific requirements is more likely to affect their behavior. A disadvantage of the tailored information approach is its labor intensity; providing individually-tailored information requires individual patient assessment and preparation of the health care message. An automated application that could provide tailored health care information might thus be useful in improving patient adherence.

Method
As part of a larger study of medication adherence in elderly patients with memory disorders, a PC-based software application to provide individually-tailored medication information was developed. Programmed in Visual Basic, the application automates a critical part of an intervention that includes assessment of patient health care literacy, preferred language, and information needs. The application provides printed output that includes the patient’s name and answers to specific questions endorsed by the patient. Output is provided at one of two literacy levels and in Spanish as well as English. Patient adherence to cholinesterase inhibitor medications prescribed for memory problems is assessed longitudinally with an electronic recording device (Medication Event Monitoring System, or MEMS; Aardex, Ltd).

Results

Pilot data show that the device has a high degree of patient acceptability. Preliminary data from the ongoing study of medication adherence indicate that the use of the tailored information device is associated with high levels of sustained medication adherence.

Discussion

Preliminary results thus show that patients find the tailored information application highly acceptable and useful. Data obtained thus far show that the use of the application is associated with high levels of sustained adherence to cholinesterase inhibitor medications in patients.

References