

Older adults can take medicines more safely and effectively by charting their daily routines

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Older adults may be better able to comply with medication regimens by working with providers to fill out simple paper tables that track what they take and when they take it. Recent experiments found that use of a "medtable" may help to prevent medication-related problems. A report appears in the September issue of *Journal of Experimental Psychology: Applied*, published by the American Psychological Association.

As they age, people often take several different prescription medications. Yet about half of older adults are found to take medicine incorrectly and up to one in three of their hospital admissions is blamed on faulty medication use. Weak collaboration with health-care providers, along with cognitive problems and lower health literacy, are viewed as contributors.

Psychologists at the University of Illinois at Urbana-Champaign led by Daniel Morrow, PhD, found that when pairs of older adults filled out a written matrix listing medications and instructions by days and times to take them, they solved medication-related problems more efficiently and accurately, especially for the complex medication schedules increasingly common among older adults.

In Experiment 1, 96 participants averaging 69 years in age were randomly assigned to the role of patient or provider. These pairs were randomly assigned to use a pre-designed medtable, a blank piece of

paper or no aid. To simulate real life, the researchers varied information about both medication and patient.

In a complex-medication condition, the researchers provided information about four medications commonly used by older adults (for example, for high blood pressure, high cholesterol and osteoporosis), including purpose, number of pills and times per day to take them, dose spacing, and special instructions or warnings. In a simple-medication condition, there were two medications with fewer constraints on when they could be taken together.

In a complex patient-information condition, patients were described as having a strict daily work routine that only let them take their medicine at lunchtime or after work. In a simple patient-information condition, there were no daily restrictions; patients could adjust wake-up times and meal times.

The "patient-provider" pairs completed four problems, one from each of the four conditions created by combining medication and patient complexity. The pairs had one minute to review each simple-medication problem and two minutes to review each complex-medication problem. The researchers told the pairs to share information verbally but not look at each other's information sheets.

Next, the pairs collaborated on schedules that reflected medication and patient constraints. To simulate the limited patient contact time in routine primary-care visits, collaborators had up to four minutes to work out simple medication problems and 10 minutes to work out complex problems. After they agreed on the schedule and filled out the matrices, patients described them to an experimenter (reported schedules were audiotaped for later scoring).

The researchers assessed problem-solving accuracy, completion time and

efficiency. Accuracy was reflected by total points awarded for meeting medication requirements (name, number of pills, times/day, dose spacing, etc.). Problem-solving time started when provider and patient began talking and ended when patients said they were ready to describe the schedule (or until time was up). Efficiency divided solution time by accuracy, indicating the time needed to achieve the same level of accuracy across participants.

Compared to the no-aid condition, the use of both blank paper and the medtable increased collaborative problem-solving accuracy and efficiency while reducing subjective workload, primarily for the complex medication problems. Researchers noticed that participants found it hard to use that particular design of the medtable, probably because it was too rigid about meal times.

Experiment 2 included 64 older adults who also averaged 69 years old, but used a redesigned medtable and raised the maximum time for complex problems from 10 to 15 minutes. With these changes, the authors found that the medtable compared with blank paper supported significantly more accurate and efficient collaborative problem-solving. These benefits occurred primarily for the complex-schedule problems.

The medtable and blank paper may have made it easier to solve problems by reducing demands on working memory, with the medtable the more effective of the two because it was designed to support problem-solving processes. The authors said the medtable also may help by integrating provider knowledge of medicine with patient knowledge of daily routines.

The authors see this tool as most suitable for pharmacists or nurses who help chronically ill older adults manage complex medication regimens. They wrote that the medtable may also be suitable when time is less of a barrier, such as when nurses or caregivers work with older patients at

home. In the future, electronic medtables could possibly expedite the updating of comprehensive medication lists. The authors wrote, "It would be important for patients to take home a copy of their medtable schedule to guide adherence."

The research team is investigating medtable use by pharmacists and nurses who work with patients with low health literacy, defined by the U.S. Dept. of Health and Human Services as "The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions."

Source: American Psychological Association

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