

Literacy Affects Drug Label Reading

BY ALICIA AULT

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WASHINGTON — Patients who read at or below the 6th-grade level had a low level of comprehension of instructions on the labels of five commonly-used medications, according to a study led by Terry Davis, Ph.D., of the Louisiana State University.

Even though labels seem short and to the point, “many patients need more specific, concrete information,” including instructions on exactly what time of day to take a medication, Dr. Davis said in presenting the findings at a conference on health literacy sponsored by the American College of Physicians.

Along with colleagues at Northwestern University, the University of North Carolina, Western Michigan Area Health Education Center, and Emory University, she queried 395 patients at three clinics that primarily serve the indigent about their understanding of labels for the following drugs: amoxicillin for pediatric use, trimethoprim, guaifenesin, felodipine, and furosemide.

The study was published online at the Annals of Internal Medicine Web site (www.annals.org/cgi/content/full/000605-200612190-00144v1).

The goal was to determine whether primary care patients could read and correctly state how to take medicines after reading the labels on actual pill bottles, Dr. Davis said. The researchers hypothesized that patients with low literacy were more likely to misunderstand instructions. They also believed that the increasing number of medications taken by Americans is leading to growing confusion and medication errors.

Participants spoke English as a primary language and were not hearing or vision impaired. Half were African American, and half were white. The mean age was 45 years, and 29% had a less than high school education. Literacy was assessed with the Rapid Esti-

mate of Adult Literacy in Medicine (REALM) test. Of the 395 patients, 19% (75) were deemed to have low literacy, reading at or below a 6th-grade level, and 29% (114) had marginal literacy, reading at the 7th- to 8th-grade level.

All patients were asked how they would take the medicine. A “correct” answer was given if they included all aspects of the label instruction. Overall, 47% (185) of patients misunderstood at least one of the instructions. For marginal literacy patients, 51% (201) misunderstood one or more instructions, and for low literacy patients, 63% (249) misunderstood.

The majority—91%, or 359 patients—understood the felodipine in-

labels, with the adjusted relative risk rising from 2.29 for one to two medications to 2.98 for five or more medications.

In a substudy, patients were tested on their understanding of the instruction, “Take two tablets by mouth twice daily,” on a bottle of guaifenesin. Overall, 84% were able to correctly state the instruction, but fewer patients knew how many pills to take. Among those with adequate literacy, 80% counted out the correct number of pills. That ability decreased with declining literacy: 63% of marginal literacy patients and 35% of those with low literacy. Dr. Davis and colleagues said that although this may have reflected patients’ numeracy skills more than reading skills, numeracy is an aspect of literacy.

Study limitations included the fact that the authors examined understanding of the primary label only. They did not assess patients’ actual compliance or drug-taking behavior, whether medication errors occurred, or if any of the patients had experience with any of the five medications.

In an editorial accompanying Dr. Davis’ study (www.annals.org/cgi/content/full/000605-200612190-00144v1), Dr. Dean Schillinger wrote that the authors did not fully prove out their conclusion that low literacy is correlated with poor comprehension because they did not “account for patients’ cognitive function or visual acuity—each of which can impair reading comprehension and could explain poor understanding of labels.”

But, he added, that “does not weaken the conclusion that many patients do not comprehend prescription labels and cannot act on their instructions,” said Dr. Schillinger, of the University of California, San Francisco.

He said the study should prod physicians to routinely ask patients if they understand what medications they have been prescribed and how to correctly take them. ■

TALK BACK

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structions, which were, “Take one tablet by mouth once each day.” The lowest level of comprehension was for trimethoprim, which had a label instructing to “take one tablet by mouth twice daily for seven days.”

Higher literacy patients routinely understood instructions better than those with lower literacy, Dr. Davis said. The adjusted odds ratio of misunderstanding for low literacy was 2.32, and for marginal literacy, 1.94. Most misunderstandings had to do with dosage. For instance, patients commonly believed they should give children a tablespoon instead of a teaspoon of amoxicillin.

Patients who took more medications were also more likely to misunderstand

Is Preventing Errors as Easy as Snapping a Photo?

WASHINGTON — Electronic bar codes and radiofrequency microchips are all the rage in medical error prevention, but one research team thinks avoiding mistakes may be as easy as snapping a photo.

Researchers with the MedStar Health network here are experimenting with facial-capture software that they say could quickly and inexpensively help busy nurses and physicians avoid mistakes.

The software can pick human faces out of any photo image in less than a second. It’s tied into a \$120 Web camera mounted behind the nurse’s triage desk, and anyone who approaches the desk automatically has his or her face captured. Nurses can permanently tie a patient’s face to the corresponding electronic health record with one click.

Nurses “don’t have to pick up a cam-

era, they don’t have to make them say cheese, they don’t have to put them in a special location. All they have to do is click on the patient’s face,” Dr. Michael Gillam, director of the Medical Media Lab at MedStar, said at the annual symposium of the American Medical Informatics Association.

MedStar researchers already developed a state-of-the-art electronic health record system allowing doctors and nurses to view patients’ full charts at a glance. The system, known as Axyzzi, was snapped up by Microsoft Corp. in July.

Now Dr. Gillam’s team is hoping that the facial photo capture system can help avoid errors by capitalizing on humans’ natural penchant for recognizing faces.

The Medical Media Lab tested the software prototype and found that it

captured the faces of all 22 racially diverse adults who approached a MedStar triage desk. But the system has yet to be put into practice to see if it really enhances patient safety.

Dr. Gillam said the automatic system could be especially useful in overwhelmed emergency departments. “Suddenly 30 patients show up . . . at one time from a bus accident. You can imagine trying to take each picture,” he said.

But as with most identity technology, privacy is a concern. After all, no one wants to have his or her face on permanent file simply for asking directions to the rest room. Dr. Gillam said that although the system would photograph all comers, images are quickly erased if nurses don’t attach them to a medical record.

—Todd Zwillich

Consumer-Driven Health Plans Fall Short in Survey

BY JANE ANDERSON

Contributing Writer

American consumers and their employers are treading cautiously when it comes to switching from traditional, more comprehensive health insurance to consumer-driven health plans, with few actually adopting the new plans, according to survey results from the Employee Benefit Research Institute (EBRI) and The Commonwealth Fund.

In addition, satisfaction among members in consumer-driven health plans (CDHPs) was considerably lower than satisfaction among individuals in more traditional plans, and more members in CDHPs reported that they had delayed getting needed medical care.

The Consumerism in Health Care Survey tracks public opinion on consumer-driven and high-deductible plans, defined as those plans with deductibles of \$1,000 or more for employee-only coverage and \$2,000 or more for family coverage. The plans also feature one of two kinds of tax-exempt savings accounts: health savings accounts (HSAs) and health reimbursement arrangements (HRAs). Employees can use money in the accounts without tax penalty to pay for medical expenses not covered by their health plans.

“Consumer-driven health plans aim to control costs largely through demand-side incentives, and to make premiums more affordable for the uninsured,” said Karen Davis, Ph.D., president of the Commonwealth Fund, at a press teleconference sponsored by EBRI and the Commonwealth Fund.

But the survey found that the plans have been slow to catch on. Just 1% of the privately insured U.S. population aged 21-64 years, or 1.3 million individuals, were enrolled in CDHPs in September 2006, unchanged from the year before—despite the widespread attention the new plans have received. Another 7% (8.5 million adults), had plans with deductibles high enough to qualify for health savings accounts but did not have an account.

Employers are cautiously awaiting data on the cost and effectiveness of the plans before switching coverage to CDHPs, Dr. Davis said.

“The plans are not well known at this point,” said Paul Fronstin, EBRI senior research associate. “Only 7% of the population responded that they are ‘very familiar’ with consumer-directed health plans, while 13% said they were ‘somewhat familiar.’”

In addition, despite the expectations of some policy makers that the lower premiums and tax benefits of CDHPs would substantially reduce the number of people without health insurance, “we did find that individuals in consumer-directed plans were not more likely to have been uninsured than those enrolled in a conventional plan,” said Mr. Fronstin.

Satisfaction lags in the plans, compared with more comprehensive health insurance, the survey found. And, 38% of those with consumer-driven coverage said that they delayed or avoided getting needed health care because of cost over the last 12 months, compared with 19% of those with comprehensive insurance.

The survey of 3,158 U.S. adults aged 21-64 was conducted in September through a 14-minute Internet survey. ■