PERSPECTIVES

Evidence Does Not Support Clinical Screening of Literacy

Michael K. Paasche-Orlow, MD, MA, MPH¹ and Michael S. Wolf, PhD, MPH²

¹Section of General Internal Medicine, Boston University School of Medicine, Boston, MA, USA; ²Health Literacy and Learning Program, Institute for Healthcare Studies and Division of General Internal Medicine, Northwestern University, Chicago, IL, USA.

Limited health literacy is a significant risk factor for adverse health outcomes. Despite controversy, many health care professionals have called for routine clinical screening of patients' literacy skills. Whereas brief literacy screening tools exist that with further evaluation could potentially be used to detect limited literacy in clinical settings, no screening program for limited literacy has been shown to be effective. Yet there is a noted potential for harm, in the form of shame and alienation, which might be induced through clinical screening. There is fair evidence to suggest that possible harm outweighs any current benefits; therefore, clinical screening for literacy should not be recommended at this time.

KEY WORDS: literacy; health literacy; screening; clinical care; communication; patient.

J Gen Intern Med 23(1):100–2

DOI: 10.1007/s11606-007-0447-2

© Society of General Internal Medicine 2007

The relationship between limited literacy and adverse health outcomes has been well documented,¹ and seminal reports about the “problem of health literacy” have been issued by the Institute of Medicine,² Agency for Healthcare Research and Quality,³ American Medical Association,⁴ and Joint Commission on the Accreditation of Hospital Organizations⁵ among others. Whereas these reports all recognize the growing need to establish an effective response within health care systems to address the problem, few intervention strategies have been studied.⁶

Despite the lack of available interventions, many health care professionals have called for clinical screening of literacy, and brief screening tools have already been developed for this purpose.^{7–9} Yet only minimal direct evidence is currently available evaluating the potential benefit of literacy screening. A single study by Seligman and colleagues examined the efficacy of clinical screening for improving physicians' care management strategies among diabetic patients.¹⁰ Whereas physicians who received notification of their patients' health literacy level were more likely to use supportive strategies, such as involving family members, they were less satisfied with patient visits than physicians not receiving notifications, and screening ultimately exhibited no benefit for patients.

Whereas screening for limited literacy might sound appealing to mitigate the health impact of this prevalent, dangerous, and often silent phenomenon, there are several important considerations that must first be addressed. We present a critical review of the case for literacy screening in clinical settings that summarizes the utility of literacy screening to date and its value added, if any, to medical care.¹¹

RATIONALE FOR CLINICAL SCREENING

A call for literacy screening is driven by the preponderance of research demonstrating associations and the predictive power of literacy skills on various health outcomes. Specifically, studies have shown that adult literacy is associated with the use of preventive services, comprehension of medical conditions and adherence to medical instructions, self-management skills, physical and mental health, mortality, and health care costs.^{1,12,13} Literacy is more strongly associated with these outcomes than educational attainment.^{12,13} Whereas patients with limited literacy are more likely to be elderly, socioeconomically disadvantaged, live in rural areas, and belong to ethnic/minority groups, research has demonstrated an increased risk for poorer health with limited literacy beyond these characteristics, and that literacy may play a mediating role in health disparities.^{14,15}

These findings underscore the need for health care interventions to address limited literacy, and a screening program might potentially aid physicians and other providers by identifying those at high risk. However, to justify a screening program, several conditions must be met: 1) Screening tests need to accurately and reliably detect limited literacy; 2) the benefit of early treatment options to reduce adverse health outcomes must be proven and available; and 3) the benefits need to outweigh adverse effects of the program.¹¹

CURRENT SCREENING TESTS

Several screening instruments for literacy are available. These instruments have been well tolerated in research settings where they have been used extensively.^{7–9,15} Yet it is uncertain whether patients would respond differently when tested by clinical staff with whom they have a relationship, and during times when they may be ill, anxious, and expecting medical care.

The most common literacy assessments in health literacy research include the Short version of the Test of Functional Health Literacy in Adults (S-TOFHLA) and Rapid Estimate of Adult Literacy in Medicine (REALM).¹⁵ The S-TOFHLA takes 7–8 minutes to administer, assessing reading comprehension of

Received June 14, 2007

Revised October 18, 2007

Accepted October 24, 2007

Published online November 9, 2007

passages using the Cloze procedure. A 4-item numeracy section was originally included, but since removed, reducing the time to administer. As a medical word pronunciation test, the REALM requires less than 3 minutes to complete and is more widely used than the S-TOFHLA.

More recently, shorter tests have been developed with the notion they might be used as clinical screening tools.⁷⁻⁹ An 8- and 7-word REALM are available and can be administered in less than 1 minute, yet their utility in research, let alone clinical settings, is less known.^{7,8} Correlations with the Wide Reading Achievement Test for the 8- and 7-word REALM short forms were 0.64 and 0.83, respectively, and both exhibited moderate to high accuracy in classifying patients with low literacy skills (>85%). Weiss and colleagues recently developed another literacy screening instrument called The Newest Vital Sign (NVS), which assesses reading numeracy skills by testing understanding of information included on a nutrition label.⁹ The NVS only requires 2-3 minutes to administer; however, in its current form, the NVS is highly sensitive and misclassifies patients with adequate literacy (area under the receiver operating characteristic (ROC) curve ranges from 0.71 to 0.88). One small study (N=119) found scores on the NVS not to be predictive of health outcomes, whereas S-TOFHLA scores were.¹⁶ Possibly, the greater emphasis on health numeracy skills displayed in the NVS makes this a more complex set of tasks, which may limit its ability to differentiate patients compared to the S-TOFHLA and REALM.

In another approach, screening questions relating to literacy activities (e.g., "How confident are you filling out medical forms by yourself?") appear to be an acceptable and benign way to gauge literacy level, but do not perform as well as tests that evaluate reading (ROC=0.83) and perform no better than a prediction model of limited literacy based on demographic characteristics.¹⁷

POTENTIAL BENEFITS OF LITERACY SCREENING TO PATIENTS

The rationale for clinically assessing a patient's individual capacity for reading, understanding, and acting on health information is grounded in the premise that individuals with limited literacy have different communication and learning needs. This notion is supported by learning disabilities research, which classifies individuals with reading difficulties as either having developmental dyslexia or as persistently poor readers who face greater cognitive challenges.¹⁸ In education, different paths for remediation have been proposed. In health care settings, specialized educational strategies based on individual learning requirements have not been established. As patient education would likely be more intensive for individuals with limited literacy, screening could potentially guide the allocation of resources.

To date, however, all suggested patient education and clinician-patient communication approaches for patients with limited literacy have been shown to benefit all patients and harm none.⁶ Patients across all levels of literacy benefit from health materials that are easier to read.¹⁹ Similarly, clinicians should learn how to communicate without jargon and confirm patient comprehension with all patients.²⁰ Whereas additional research evaluating these communication practices is

warranted, it appears that practices such as confirming comprehension should not be reserved only for those with limited literacy, as clear health communication is not a scarce resource to be selectively distributed. There have been only 2 identified exceptions wherein patients with limited literacy received services necessary only to them, namely, adult basic education. In 1 pilot study, patients being treated for depression who were referred to an adult basic education program had lower levels of depressive symptoms compared to those not referred.²¹ In another small study, parents of children in Head Start who participated in a supplementary Family Service Center program that included adult basic education had improved functional literacy scores, increased family incomes, and decreased depression in comparison with subjects who did not participate in this 2-year multimodal program.²²

POTENTIAL FOR HARM

Sensitive and potentially stigmatizing topics are frequently broached in medical settings, justified by the overall likelihood of benefit from directed medical care that might result. In Seligman's study of literacy screening, 150 of the 160 (94%) subjects felt that health literacy screening was useful; however, as noted by the authors, without a direct measure of patient stigma, this study did not evaluate the possibility that patients may have nonetheless felt stigmatized.¹⁰ Literacy screening programs could negatively impact patient care by promulgating fear and labeling. Previous research has found that nearly half of individuals with limited literacy report feelings of shame and often attempt to conceal this knowledge from others.^{23,24} In 1 study, two-thirds of patients with limited literacy had never told their spouse and 19% had not disclosed their reading difficulties to anyone.²³ Thus, patients, especially those with lower literacy, may not be receptive to routine measurement of their literacy skills, nor want it recorded in their medical record.²⁴ Such shame could further alienate patients who already face a significant barrier accessing health care.

RECOMMENDATION

There are tools now available that, with further evaluation, could potentially be used in a literacy screening program. However, there is no known benefit from screening in the form of enrollment in a training program that would be delivered solely to those found to have limited literacy. While not definitive, there is also potential for harm, in the form of shame and alienation, which might be induced through clinical screening. At this time, there is insufficient evidence to recommend clinical screening for health literacy.

DISCUSSION

If interventions emerge that should be exclusively delivered to patients with limited literacy, there would be a more clear justification for a screening program. Additional research is warranted at this time to provide evidence of the utility of literacy tests in clinical settings, or possibly reveal screening techniques that truly minimize the risk of stigma and alienation. It should be noted that the trial described by Seligman and colleagues did not provide the physicians with specific

training, nor were they or their patients supported with additional patient education or disease management tools for those identified as having limited health literacy. Given that physicians in that trial discussed the result of literacy screening in only 2% of the encounters, a research agenda for clinical screening will likely need to include provider training and appropriate support materials to promote patient education and further reduce stigma.

Until research has shown a literacy screening program that can benefit patients without evidence of harm, physicians and other health professionals should pursue responses to the problem of limited health literacy that do not depend on screening. First, health plans and large provider groups should get an estimate of their local prevalence of limited literacy, by going to <http://www.casas.org/lit/litcode/Search.cfm>.²⁵ Rates reported on this website are derived from the 1993 National Adult Literacy Survey, and should be adjusted upwards for clinical populations that are older and have chronic diseases. Public health initiatives should provide or direct clinicians to this information. Along these lines, data from the 2004 National Assessment of Adult Literacy should be used to develop updated and more refined local estimates to inform providers.²⁶ Second, clinicians and health system administrators should work to reduce unneeded complexity. Discussion of screening focuses on patient skills, however, solutions ultimately must also be sought through streamlining an inordinately complicated health care system.² Third, "universal precautions" should be adopted to confirm all patients' understanding of critical self-care activities and to support problem solving.²⁷ Any significant patient education initiative will require dedicated resources. If clinicians take the time to evaluate patient comprehension, they can target each patient's specific clinical needs, rather than a specific group of patients.

Acknowledgment: Dr. Wolf is supported by a career development award through the Centers for Disease Control and Prevention (1 K01 EH000067-01).

Conflict of Interest: None disclosed.

Corresponding Author: Michael K. Paasche-Orlow, MD, MA, MPH; Section of General Internal Medicine, Boston University School of Medicine, 91 East Concord Street, Suite 200, Boston, MA 02118, USA (e-mail: mpo@bu.edu).

REFERENCES

- Dewalt DA, Berkman ND, Sheridan S, Lohr KN, Pignone MP. Literacy and health outcomes: a systematic review of the literature. *J Gen Intern Med*. 2004;19:1228-39.
- Institute of Medicine. Health literacy: A prescription to end confusion. In: Nielsen-Bohlman L, Panzer A, Kindig DA, eds. Washington, D.C., National Academies Press, 2004.
- Berkman N, Pignone MP, DeWalt D, Sheridan S. Health literacy: Impact on Health Outcomes. Evidence Report/Technology Assessment. Rockville, MD: AHRQ, 2004.
- Ad Hoc Committee on Health Literacy, American Medical Association Council on Scientific Affairs. Health literacy: report of the Council on Scientific Affairs. *JAMA*. 1999;281:552-7.
- Joint Commission for the Accreditation of Hospital Organization (JCAHO). What Did the Doctor Say? Improving Health Literacy to Protect Patient Safety. Health Care at the Crossroads Report. Oakbrook, IL, 2007. February.
- Pignone M, DeWalt DA, Sheridan S, Berkman N, Lohr KN. Interventions to improve health outcomes for patients with low literacy. A systematic review. *J Gen Intern Med*. 2005;20:185-92.
- Bass PF 3rd, Wilson JF, Griffith CH. A shortened instrument for literacy screening. *J Gen Intern Med*. 2003;18:1036-8.
- Wolf MS, Heckinger EA, Arozullah A, et al. Identifying persons with poor health literacy in 7 seconds: an important adjunct to improving cancer screening and treatment. *J Clin Oncol* 2004;22(14S):6007.
- Weiss BD, Mays MZ, Martz W, et al. Quick assessment of literacy in primary care: the newest vital sign. *Ann Fam Med*. 2005;3:514-22.
- Seligman HK, Wang FF, Palacios JL, et al. Physician notification of their diabetes patients' limited health literacy. A randomized, controlled trial. *J Gen Intern Med*. 2005;20:1001-7.
- United States Preventive Services Task Force. The guide to clinical preventive services. Rockville, MD. AHRQ, 2006.
- Wolf MS, Gazmararian JA, Baker DW. Health literacy and functional health status among older adults. *Arch Intern Med*. 2005;165:1946-52.
- Wolf MS, Feinglass JM, Carrion V, Gazmararian J, Baker D. Literacy and mortality among Medicare enrollees. *J Gen Intern Med*. 2006;21:81. Abstract.
- Wolf MS, Knight SJ, Durazo-Arvizu R, et al. Associations of race, literacy, and income with PSA level among men with newly diagnosed prostate cancer. *Urology*. 2006;68:89-93.
- Paasche-Orlow MK, Parker RM, Gazmararian JA, et al. The prevalence of limited health literacy. *J Gen Intern Med*. 2005;20(2):175-84.
- Osborn CY, Weiss BD, Davis TC, Skripkauskas S, Rodrigue C, Bass PF, Wolf MS. Measuring adult literacy in health care: performance of the Newest Vital Sign. *Am J Health Behav*. 2007 Sep-Oct;31(Suppl 1):S36-46.
- Wallace LS, Rogers ES, Roskos SE, Holiday DB, Weiss BD. Brief report: screening items to identify patients with limited health literacy skills. *J Gen Intern Med*. 2006;21:874-7.
- Shaywitz SE, Shaywitz BA. Dyslexia (specific reading disability). *Biol Psychology* 2005;57:1301-1309.
- Weiss BD, Francis L, Senf JH, et al. Literacy education as treatment for depression in patients with limited literacy and depression: a randomized controlled trial. *J Gen Intern Med*. 2006;21(8):823-8.
- Sudore RL, Landefeld CS, Williams BA, Barnes DE, Lindquist K, Schillinger D. Use of a modified informed consent process among vulnerable patients: a descriptive study. *J Gen Intern Med*. 2006;21(8):867-73.
- Paasche-Orlow MK, Riekert KA, Bilderback A, Chanmugam A, Hill P, Rand CS, Brancati FL, Krishnan JA. Tailored education may reduce health literacy disparities in asthma self-management. *Am J Respir Crit Care Med*. 2005;172(8):980-6.
- Poresky RH, Daniels AM. Two-year comparison of income, education, and depression among parents participating in regular Head Start or supplementary Family Service Center Services. *Psychol Rep*. 2001;88(3 Pt 1):787-96.
- Parikh NS, Parker RM, Nurss JR, Baker DW, Williams MV. Shame and health literacy: the unspoken connection. *Patient Educ Couns*. 1996; 27:33-9.
- Wolf MS, Williams MV, Parker RM, Parikh NS, Nowlan AW, Baker DW. Patients' shame and attitudes toward discussing the results of literacy screening. *J Health Commun*. 2007;12:1-12.
- Comprehensive Adult Student Assessment System (CASAS). San Diego, CA. (Accessed March, 6, 2007, at <http://www.casas.org/lit/litcode/Search.cfm>).
- Lurie N, Parker RM. Moving health literacy from the individual to the community. *Am J Health Behav*. 2007;31:6-7.
- Paasche-Orlow MK, Schillinger D, Greene SM, Wagner EH. How health care systems can take steps to address the challenge of limited literacy. *J Gen Intern Med*. 2006;21(8):884-7.