Communicating Benefits and Harms of Treatment

TO THE EDITOR: After reading the article by Woloshin and Schwartz (1) on communicating risk, I reviewed a similar publication by the same authors (2). I do not disagree with the findings of either study, but I do believe there is a problem with the choice of methods used to present scenarios to patients. The key is to use concrete and personalized images that give meaning to abstract concepts of benefit and harm (3).

Begin with using an appropriate frame of reference. If the denominator is 100, use the number of U.S. senators. If 1000, cite the number of soldiers in a battalion. If 10,000, use the capacity of the local AAA baseball team. If 100,000, refer to the attendance at the annual Ohio State University–Michigan football game.

To review comparative data, ask the patient to imagine 2 separate barrels of Ping-Pong balls. One barrel is marked with the intervention (Questor) and the other placebo. The Questor barrel contains 25 red Ping-Pong balls (heart attack) and 975 white Ping-Pong balls (no heart attack). The placebo barrel contains 33 red Ping-Pong balls and 967 white Ping-Pong balls. Repeat the scenarios for side effects. Finally, ask the patient to imagine that they are blindfolded and are reaching into each barrel and request that they assess how much risk they are willing to assume to achieve the stated benefit. For primers in this area, the comparative scenarios can be illustrated in drawings.

David A. Nardone, MD (Retired)
VHA Medical Center and Oregon Health & Sciences University Hillsboro, OR 97124-5094

Potential Conflicts of Interest: None disclosed.

References

IN RESPONSE: Dr. Nardone’s suggestion on how to communicate risk is intended to help patients develop a sense of numbers using concrete images. For this technique to work, though, it would be important to use images that are familiar to the target audience. We doubt that most Americans know how many soldiers are in a battalion (we don’t), the capacity of the field for the local AAA baseball team (we don’t even know if we have an AAA team), or even the number of U.S. senators (we did know this one).

Even with familiar images, there may still be problems. Changing the denominators to accommodate chances of different magnitude may undermine communication. In our trial, people had the most trouble understanding the variable frequency format where denominators are to understand and eliminate the unnecessary literacy-related barriers that patients face and improve health outcomes. Studies reflected in current publications have been limited, and the focus on 1 part of the equation has hobbled our understanding of health literacy issues. Perhaps further reviews will consider the assumptions and theories underlying the various studies and make this limitation more overt.
Rima E. Rudd, ScD, MSP
Harvard School of Public Health
Boston, MA 02115

Potential Conflicts of Interest: None disclosed.

References

TO THE EDITOR: I read with great interest Berkman and colleagues’ systematic review (1) of selected studies on “health literacy” and numeracy, which highlights only the results that reviewers deduced by analyzing abstracted articles in tabular form and rating study quality by using predefined criteria. On the basis of the health literacy skills (2), Berkman and colleagues’ review concludes that low literacy is associated with poorer health outcomes and poorer use of health care services. The major limitation of their review is that actual patients were not studied.

Education level, socioeconomic status, and the health care setting (for example, clinics, hospitals, or emergency departments) also influence outcomes. Although health literacy may influence patient outcome, it is also affected profoundly by how much time physicians spend with patients explaining their disease or management and the extent to which this information is discussed without complicated medical jargon. In today’s health care delivery system, where quantity of patients (and not quality of care) is emphasized, the physician–patient discussion receives less attention.

Even the most literate patient may not understand the various diseases and, moreover, the complex treatments involved, because of the paucity of time a physician spends with each patient. On the other hand, even the most “health-illiterate” patient may have a good outcome if he or she is self-motivated and informed and has adequate insurance coverage and strong family or social support. Berkman and colleagues’ review also does not focus on demographics, because patients living in rural and outlying areas are known to fare poorly compared with those living in urban or suburban areas because of lack of easy access to emergent care (3–5). So, health literacy alone does not affect the ultimate outcome.

Hema Padmanabhan, MD
Silver Spring, MD 20906

Potential Conflicts of Interest: None disclosed.

References
4. Laditka JN, Laditka SB, Probst JC. Health care access in rural areas: evidence that hospitalization for ambulatory care-sensitive conditions in the United States may increase with the level of rurality. Health Place. 2009;15:731-40. [PMID: 19211295]

TO THE EDITOR: I agree with Berkman and colleagues (1) that many facets of the health literacy issue remain unexamined. I do believe that as our colleagues become more aware of the problem, we will see a more robust investigational approach that includes patient—provider communication, patient learning styles, teaching methods, specific readability scales for health-related information, and many other areas related to health literacy.

Our anticoagulation clinic regularly measures health literacy by using the Rapid Estimate of Adult Literacy in Medicine—Short Form (REALM-SF); we then provide our patients with health literacy—appropriate communication and written literature. Although the REALM-SF does not measure comprehension, it is better than the highest education level attained, which we have found to be a mediocre indicator of health literacy.

Interventions, and data on whether those interventions improve health literacy, also are lacking. If we improve health literacy, do clinical outcomes improve as well?

This subject is of great interest to nurses, as we provide most patient education in the acute and long-term settings. Initiatives to improve health literacy include the National Action Plan to Improve Health Literacy (www.health.gov/communication/hlactionplan/). This important topic deserves robust research and clinical translation of findings.

Joy C. Burnette, RN, BSN
Atlanta Heart Group
Decatur, GA 30033

Potential Conflicts of Interest: Consultancy: Alere Health Management; Grants/grants pending (money to institution): Iverson Genetic Diagnostics.

Reference

TO THE EDITOR: Berkman and colleagues’ comprehensive review (1) updated the literature on health literacy since 2004. I appreciated this substantial undertaking and would like to include an update. The authors state that “[n]o evidence concerning oral health literacy (speaking and listening skills) and outcomes was found.” However, literature that addresses oral literacy and health outcomes does, indeed, exist.

Several studies have focused on the importance of dialogue in health by addressing oral and aural literacy. Four articles (2–5) have discussed measures of oral literacy. Two studies examining the relationship between oral literacy and health outcomes, measured skills by using the Woodcock–Johnson Tests of Achievements (Riverside Publishing, Rolling Meadows, Illinois) reported as grade equivalents (6, 7). My colleagues and I found a statistically significant association...
between lower aural literacy skills and less successful asthma management (6). Martin and colleagues (7) found that reading, numeracy, and aural language skills were significantly associated with risk for coronary heart disease among women.

I look forward to a more expansive agenda in health literacy—one that broadens the notion of literacy beyond attention to the written word and that broadens the focus of interest to include the skills of health providers and the expectations of health systems. Dr. Rudd’s letter in this issue about Berkman and colleagues’ review aptly notes this concept.

Lindsey Rosenfeld, ScD, ScM
Northeastern University
Boston, MA 02115

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References

IN RESPONSE: Health literacy is a set of skills that people need to function effectively in the health care environment. These skills include reading and understanding text, locating information in documents, using numerical information (for example, measuring, counting, and ratios), and speaking and listening effectively. In our article, my colleagues and I examined the relationship between relative shortcomings in these skills (referred to as low health literacy) and poorer health outcomes.

On the basis of our systematic review of 96 studies, we agree with Dr. Rudd that future studies including analytic frameworks that thoughtfully conceptualize the link between individuals’ health literacy level and their health outcomes would enhance these 2 factors. Some studies have more thoroughly considered the complexity of this relationship. They have examined the role of other, potentially intervening factors on outcomes; for example, previous knowledge and beliefs about one’s medical condition and level of self-efficacy. More patient-oriented research examining how these and other characteristics can affect outcomes for persons with low health literacy (as Dr. Padmanabhan suggests) is needed.

Like Dr. Rudd, Dr. Padmanabhan, and Ms. Burnette, we appreciate that this body of literature does not evaluate the skills of the writer or the speaker. Thus, it cannot provide insight into what occurred in the “black box” of health information or personal medical encounters to help explain why outcomes were poorer for patients with lower literacy. However, this review does take the necessary first step of assembling credible evidence of a relationship between low health literacy and important health outcomes. Showing this link does not imply that researchers and the readers of their studies are likely to blame individual patients for poor outcomes.

Of course, documenting this relationship does not tell us how to correct it. This review was part of a larger project that also examined the evidence on interventions to assist persons with low health literacy (1, 2). Although we must understand much more about effective interventions, researchers are beginning to consider not only approaches to improving the presentation and communication of information but also more complex strategies to improve more distal health outcomes.

Dr. Rosenfeld cites 2 studies that at the time of our review had not yet been indexed in PubMed by using the Medical Subject Heading term “health literacy” (3, 4). These studies introduce the term “aural literacy,” providing a useful distinction between listening (aural) and speaking (oral) skills.

I appreciate the opportunity to respond to these thoughtful letters.

Nancy D. Berkman, PhD
RTI International
Research Triangle Park, NC 27709

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References

Risk for Complications After Transthoracic Needle Lung Biopsy

TO THE EDITOR: I read with interest the important findings by Wiener and colleagues (1) that highlight the 15% (95% CI, 14% to 16%) risk for pneumothorax as a complication of transthoracic needle biopsy for pulmonary nodules. We agree that the need is increasing for clinicians to...
consider this procedure for evaluation of pulmonary nodules, which are frequently identified in this era of modern imaging intentionally through screening studies and unintentionally through computed tomography (CT) pulmonary angiography (2) and CT coronary angiography (3).

This high-quality study provides a reliable estimate of population-level risk. However, as with all good clinical decisions, this population level of risk must be tempered by a careful consideration of the individualized risk–benefit ratio. The risk for pneumothorax associated with transthoracic needle biopsy is well-known to be associated with lesion depth and size (4) as well as underlying lung disease, such as emphysema (5). Alternative diagnostic procedures, such as transbronchial biopsies guided by endobronchial ultrasonography or electromagnetic navigation bronchoscopy, are associated with much lower pneumothorax rates and should be considered in patients with poor lung function or nonpleural lesions (6).

Moreover, the pretest probability of any one nodule being malignant, the method of case finding (symptomatic vs. screening), and the likelihood of successful clinical intervention or treatment must be considered in the decision-making process. A multidisciplinary approach and knowledge of local complication rates is imperative to ensure that the most appropriate diagnostic test is chosen.

I congratulate and thank the authors for conducting a significant study that provides a robust baseline on which astute physicians and informed patients can start to personalize decision making in the assessment of pulmonary nodules based on available evidence.

Steven Leong, MBBS
The Prince Charles Hospital
Brisbane, Australia 4032

Potential Conflicts of Interest: None disclosed.

References

IN RESPONSE: We appreciate Dr. Leong’s interest in our study. We recognize that newer bronchoscopic techniques guided by endobronchial ultrasonography or electromagnetic navigation may be considered, if available, when the clinician is deciding how to evaluate a patient with a pulmonary nodule. However, we were unable to include these procedures in our analysis because they do not have dedicated International Statistical Classification of Diseases and Related Health Problems, Volume 9, procedure codes assigned to them. We therefore cannot comment on use or complication rates of these procedures.

We fully agree with Dr. Leong that individual characteristics must be considered when estimating the risk for complications of transthoracic needle biopsy. Unfortunately, the administrative databases we used for this analysis lacked clinical detail and we could not assess the effects of individual characteristics, such as nodule size and location on risk for complications. Our goal in this study was to provide an estimate of the risk for complications after transthoracic needle biopsy (CT-guided biopsy) when all patients having the procedure were considered; for individuals, the pretest probability of a complication may of course be higher or lower based on personal risk factors.

As reported in our study, we believe that population-level data on complications can be useful to provide patients with a general sense of risk for a procedure, but it is equally important to indicate to individual patients whether (and why) their risk for complications might be higher or lower than average. To minimize harm while maximizing benefit, physicians and patients should weigh the individualized pretest probability both of cancer and of complications from testing before deciding whether to proceed with biopsy of a pulmonary nodule.

Renda Soylemez Wiener, MD, MPH
The Pulmonary Center, Boston University School of Medicine
Boston, MA 02218

H. Gilbert Welch, MD, MPH
Veterans Affairs Medical Center
White River Junction, VT 05009

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Correction

Correction: Urinary Incontinence in Women

A recent review (1) carried over an error from a Cochrane review (2) about the effects of adrenergic drugs for urinary incontinence. The original trials examined the effects of norfenefrine, not norepinephrine (3, 4), but the Cochrane review replaced the name of the drug norfenefrine with norepinephrine. This has been corrected in the online version.

References