Health Literacy: implications and Practical Communication Strategies

Tiffany B. Threatt, PharmD, CDE, Assistant Professor of Pharmacy Practice, Presbyterian College School of Pharmacy

Kayce M. Shealy, PharmD, BCPS, CDE, Assistant Professor of Pharmacy Practice, Presbyterian College School of Pharmacy

Objective:
At the conclusion of this knowledge-based activity, the pharmacist will be able to:
1) Recognize prevalence and risk factors of limited literacy.
2) Recognize clinical implications of limited literacy.
3) Identify assessment tools for evaluating health literacy.
4) Describe strategies for improving health literacy in practice.

Abstract
Objective: This course will provide insight into the importance of health literacy assessment, tools used to evaluate health literacy, and practical strategies for communicating with patients with limited health literacy.
Summary: Health literacy refers to the ability of a patient to obtain, communicate, process, and understand basic information related to health and health-related services. It is estimated that the majority of adult Americans have difficulty understanding health information. As a consequence, limited health literacy is associated with over $100 billion in health care costs. Health literacy screening tools are useful resources as a clinician may not be able to readily discern which patients are affected by limited health literacy. Once a patient has been identified as having limited health literacy, practical strategies can be employed to ensure that patients understand and can act on health information.
Conclusion: People with low health literacy are a significant part of the patient population in all settings. Efforts to assess health literacy and design interventions to minimize negative health consequences are essential to improving health care and decreasing its economic burden. Health care providers, including pharmacists, are responsible for making sure patients obtain optimal health outcomes and the health literacy level of the patient should be considered.

Keywords: health literacy; patient communication, NVS, REALM, TOFHLA, SAHL, BRIEF, LAD

Introduction
Patients are faced with an array of decisions when it comes to their health. Often these decisions are life changing and require a level of understanding or education that individuals may lack. Although health care professionals generally assume that the health information and instructions a patient receives are understood, the reality is that the information and instructions are often misunderstood, which results in negative health outcomes. It has been estimated that the majority of adult Americans have some level of difficulty understanding the health information presented to them. The Institute of Medicine defines health literacy as “the degree to which an individual has the capacity to obtain, communicate, process, and understand basic health information and services needed to make appropriate health decisions.” Recognizing and adapting to a patient’s level of health literacy is paramount to the effectiveness of the patient encounter. The American Medical Association’s Ad Hoc Committee on Health Literacy for the Council on Scientific Affairs (1999) has further defined health literacy as “a constellation of skills, including the ability to perform basic reading and numerical tasks required to function in the healthcare environment” and stated that “patients with adequate health literacy can read, understand, and act on health care information.” This definition emphasizes the functional aspects of health literacy. The possibility that a person may function adequately in a non-health setting while still experiencing difficulty understanding and making appropriate decisions regarding their health, underscores the need for health care professionals to assess and address issues of health literacy. Health literacy has been increasingly described as the currency for improving the quality of health and health care in the United States (U.S.) as health literacy affects people’s ability to navigate the health care system; share personal information, such as a health history, with providers; engage in self-care and chronic-disease management; and understand...
mathematical concepts such as dosing, probability, and risk.\textsuperscript{3,5}

**Prevalence**
The 2003 National Assessment of Adult Literacy (NAAL), a comprehensive measure of literacy among adults that included an assessment of health literacy, revealed that more than one-third of the U.S. population – 77 million people – are at a basic or below basic level of health literacy (see Table 1).\textsuperscript{1} These individuals likely lack the skills needed to understand health information and perform even the simplest of common health tasks, such as correctly following directions on a prescription drug label. They are also not able to provide information as to why and when certain illnesses might need to be tested. Only 12% of adults in the United States were considered to have proficient health literacy. Although this report defined four health literacy levels using the terms “below basic,” “basic,” “intermediate,” and “proficient,” studies have used varying terminology to describe a patient’s level of health literacy. Below basic or basic may be described as inadequate, low or limited; intermediate may be described marginal; and proficient may be considered adequate.

**Risk factors for limited health literacy**
Factors leading to the problem of limited health literacy go beyond an individual’s general literacy and encompass systemic and individual contributors. These factors include but are not limited to the following: lay and professional knowledge of health topics; the amount of experience in the health care system; demands of the health care and public health systems; the context of the situation; listening, speaking, mathematical, writing, and reading skills; and culture.\textsuperscript{6} Additionally, the complexity of health information being presented and the actual communication of the information play a role.

Limited health literacy affects adults in all racial and ethnic groups, but it may impact certain segments of the population more than other demographic groups. It has been estimated that the proportion of adults with basic or below basic health literacy ranges from 28 percent of white adults to 58 percent of African Americans and 65 percent of Hispanic adults.\textsuperscript{1} A notable finding from the NAAL survey is the rate of limited health literacy among adults over 65 years of age. In this fastest growing segment of the U.S. population, 59 percent scored at the basic or below basic level. Studies have indicated that half of adults without a high school education have below basic health literacy skills; however, it should be recognized that education only measures the number of years that an individual attended school, not how much the person learned while in school. Even high school and college graduates can have limited health literacy. While certain groups such as the elderly, minorities, low income, and persons with limited English proficiency and education are at higher risk, it is important to remember that low health literacy is a problem that affects all groups and segments of society.\textsuperscript{6}

Many people with low health literacy skills are very good at concealing their deficit and can be verbally articulate or choose to avoid situations that may expose a health literacy problem. This can make it particularly difficult for a clinician to recognize that a problem exists. However, observing closely and asking some questions that can serve as “red flags” for a problem, can be helpful to identify patients at risk. Characteristics and behaviors that patients with low health literacy often exhibit include:
- Making excuses when asked to read or fill out forms. Examples include: “I left my glasses at home”, “I’ll read this later”, or “I’m too tired to read;”
- Skimming over text without focusing on anything in the text;
- Lifting text closer to eyes or pointing at specific words while reading;
- Providing an incomplete medical history or checking “none of the above” in order to avoid additional questioning;
- Missing appointments;
- Making errors regarding instructions for their medication therapy;
- Identifying medications by looking at the tablet or capsule for color, size, or shape instead of reading the label;
- Displaying signs of nervousness, confusion, or frustration;
- Avoiding situations where complex learning may be required; and
- Providing incorrect answers when questioned about what they have read.

**Implications of limited literacy**
The overall impact of health literacy is broad and significant. Low or limited health literacy is associated with a variety of negative health behaviors and health outcomes. Patient-level consequences include, but are not limited to, reduced health benefits, increased hospitalizations, greater use of emergency care, missed prescription refills and provider visits, inappropriate timing and dosing of medications, less use of preventative services, and failure to recognize adverse effects or drug interactions.\textsuperscript{6,13}
Research has demonstrated a significant correlation between low literacy and misunderstanding prescription drug labels; inadequate health literacy has been shown to affect a patient’s ability to problem solve and perform calculations necessary for taking medications correctly. Poor adherence to medications is a national burden in the U.S. and is believed to be largely attributed to low literacy and reading skills. Millions of Americans suffer from adverse health outcomes (e.g., uncontrolled diabetes, hypertension, or hyperlipidemia) each year as the result of not taking medications correctly. Non-adherence to medications and medication-related errors are responsible for an estimated 125,000 deaths, nearly one quarter of admissions to nursing homes, more than 10% of geriatric hospital admissions, and 20% of the preventable adverse effects reported annually in the U.S.14-19 These patient-level consequences translate into significant economic burdens on the health care system and society in general through indirect costs.

Unfortunately, economic studies on the direct costs of low health literacy are limited. Although the true financial impact this makes on our health care system is likely not fully recognized, research has shown that, compared to patients with adequate health literacy, total costs, emergency room costs, and inpatient costs are higher for patients with inadequate health literacy.20 A key finding from a review of a Medicaid population in Arizona demonstrated that persons with low literacy skills generate significantly higher health care costs than those with better reading skills.8 Experts attribute between $106 and $236 billion each year to a lack of health literacy. Future costs of low health literacy that result from current actions, or lack of action, are expected to reach the trillions.21

The Test of Functional Health Literacy in Adults (TOFHLA) is available in English and Spanish. The full tool consists of 67 questions and measures (TOFHLA) is available in English and Spanish. The Test of Functional Health Literacy in Adults (TOFHLA) is available in English and Spanish. The full tool consists of 67 questions and measures reading comprehension as well as numeracy, and may take more than 20 minutes to administer. A shortened version, S-TOFHLA, is available and contains 36 questions and can be completed in less than 10 minutes. Patients are categorized as having adequate, marginal, or inadequate health literacy depending on the results.

Regardless, identifying patients with potential health literacy problems is necessary if health care providers are going to attempt to reduce the adverse consequences of low health literacy. There are many tools available that have been validated for use in various settings and patient types. The following is a description of several commonly used tools. More information on these tools is presented in Table 2.

**Newest Vital Sign**

The Newest Vital Sign (NVS) was developed by Weiss and colleagues for use in the primary care setting.24 This tool asks patients to answer 6 questions that relate to literacy and numeracy, the ability to reason and apply simple numerical concepts, using information found on an ice cream label. The number of correct responses correlates to health literacy level, with more correct responses indicating a higher level of health literacy. A score of 0-1 suggests high likelihood (50% or more) of limited literacy, 2-3 is suggestive of possible limited literacy, and 4-6 almost always indicates adequate literacy. This tool can be administered in approximately three minutes and is available in English and Spanish.

**Rapid Estimate of Adult Literacy in Medicine**

Another tool available is the Rapid Estimate of Adult Literacy in Medicine (REALM). Developed by Davis and colleagues in the early 1990s, this tool focuses on word recognition and does not include comprehension.25 Patients are provided a list of terms commonly encountered in a medical setting, and are asked to pronounce as many as possible. Patients receive a point for each word pronounced correctly. The final score suggests what grade reading level the patient is able to understand. This test is comparable to other tools. A shortened form is also available (REALM-SF).26 The shorter version can be administered in approximately three minutes.

**Test of Functional Health Literacy in Adults**

The Test of Functional Health Literacy in Adults (TOFHLA) is available in English and Spanish.27 The full tool consists of 67 questions and measures reading comprehension as well as numeracy, and may take more than 20 minutes to administer. A shortened version, S-TOFHLA, is available and contains 36 questions and can be completed in less than 10 minutes. Patients are categorized as having adequate, marginal, or inadequate health literacy depending on the results.

**Health literacy assessment tools**

Despite the apparent benefit in being able to identify patients with low health literacy and develop interventions or more appropriate communication methods to increase patient success with their health outcomes, not all health settings utilize a health literacy assessment for directing patient care.22 Some experts even discourage assessing a patient’s reading ability in the health care settings due to concerns over potential patient anxiety about confidentiality, patient embarrassment, or lack of effective interventions available even if the assessment suggests the likelihood of limited health literacy.23
What is my main problem?
What do I need to do?
Why is it important for me to do this?

In such situations, pharmacy support personnel, such as technicians and pharmacy students, can also be trained to perform health literacy assessments. Using a screening tool such as the SILS may be a practical choice in this setting as it only involves asking the single question, “How often do you need to have someone help you when you read instructions, pamphlets, or other written material from your doctor or pharmacy?”

Possible patient responses are: 1-Never, 2-Rarely, 3-Sometimes, 4-Often, and 5-Always. Scores greater than 2 are considered positive, indicating some difficulty with reading printed health related material. Regardless of the screening option used, awareness of a patient’s limited health literacy should produce extra effort on the part of the pharmacist to ensure patient understanding of health information.

Universal precaution methods for ensuring patient understanding of health information can be utilized in all patient settings and include: simplifying communication with and confirming comprehension for all patients so that the risk of miscommunication is minimized; making the office environment and health care system easier to navigate; and supporting patients’ efforts to improve their health. Unless providers assume that everyone has low health literacy and intervene accordingly, health literacy assessments to guide the patient care process should be employed.

Successful strategies for working with patients with limited health literacy center around establishing an environment that promotes health literacy and avoids shaming or embarrassing individuals with limited health literacy. Adequate communication is an overarching goal as patients often need to remember a substantial amount of information after a visit with their health care provider. This information is often essential for patients being able to understand how to take medications correctly, manage complex, chronic diseases, recognize adverse events, and follow up with their health care provider at appropriate intervals. Clear oral and written communication strategies encourage patients to become more involved in managing their care and increase the likelihood of positive encounters.

Table 3 describes recommendations for successful oral and written communication with patients and includes Ask Me 3, Show and Tell, the Indian Health Service (IHS) model for patient counseling, and the Teach-Back method. Ask Me 3 is a patient education program designed to improve communication between patients and health care professionals by promoting patient involvement in their care. Patients are encouraged to ask their health care professional the following three questions:

- What is my main problem?
- What do I need to do?
- Why is it important for me to do this?
The concept of show and tell centers on one final prescription check and counseling effort that should be made at the time the prescription is presented to the patient. The pharmacist should remove the prescription bottle from the bag, review the directions and name of the medication with the patient, and visually check the contents. Through this process, a pharmacist can ensure that the right medication is in the right bag and that the patient has a clear understanding of the medication by asking open-ended questions from the IHS model for patient counseling. The Teach-Back method can be used by the pharmacist to confirm patient understanding if the patient is able to teach-back the information accurately. If not, the opportunity exists for reteaching the information until patient understanding is achieved.

There are various tools available to help pharmacists determine the readability of printed materials. The Simple Measure of Gobbledygook (SMOG) was created in the late 1960s to assess how many years of education would be needed to read a given piece of writing. Other readability tests are the Flesch Reading Ease and the Flesch-Kincaid Grade Level. These tools are also available online in the form of readability calculators and integrated within Microsoft Office 2007 products and later versions. Similar to the SMOG, the tools are intended to determine what grade level a person would need to read and understand a given writing. Given that the average reading level in the U.S. has been estimated at eighth grade, ensuring that materials require no higher education than this is advisable when practicing universal precautions.

**Resources for clinical practice**

There are numerous resources available for helping health care professionals incorporate health literacy concepts into everyday practice. A summary of 2 commonly used resources is included here.

The U.S. Department of Health and Human Services has developed a *Quick Guide for Health Literacy* that includes: a basic overview of key health literacy concepts; techniques for improving health literacy through communication, navigation, knowledge-building, and advocacy; examples of health literacy best practices, and suggestions for addressing health literacy issues within an organization. This guide is designed to be a quick reference filled with fact sheets, checklists, practical strategies, and resources of Web sites, research studies, and additional publications on health literacy.

The Agency for Healthcare Research and Quality (AHRQ) has compiled a *Health Literacy Universal Precautions Toolkit* (2nd edition) that can help practitioners simplify the complexity of health care, improve patient understanding of health information, and increase the level of support provided for patients of all health literacy levels. This 21-tool guide is divided into four domains that addresses spoken communication, written communication, self-management and empowerment, and supportive systems. Overall, it is designed to ensure that systems are in place to promote better understanding by all patients, not just those who appear to need extra assistance. It mimics the universal precaution approach, as taken with blood borne pathogens and assumes that everyone is affected by limited health literacy since it is often not possible to know which patients are challenged by health information and tasks. In addition to the tools, sample forms, PowerPoint presentations, and worksheets compiled is this kit, an assessment guide that leads a practitioner in evaluating their practice and identifying areas to target in quality improvement efforts is included.

**Conclusion**

Regardless of the setting, people with low health literacy are a significant part of the patient population. Efforts to assess health literacy and design interventions to minimize negative health consequences are essential to improving health care and decreasing its economic burden. Pharmacists are one of the most accessible health care professionals and care for a diverse group of patients with wide variations in background, educational level, income capacity, and ethnicity. Pharmacists and all health care providers are responsible for making sure patients obtain optimal health outcomes from their medications, and health literacy level of the patient is a key consideration in realizing these goals.

**References**


<table>
<thead>
<tr>
<th>Health literacy level</th>
<th>Task examples appropriate for health literacy level</th>
<th>Percentage of U.S. adult population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proficient</td>
<td>Using a table, calculate an employee’s share of health insurance costs for a year; define medical term from a complex document</td>
<td>12%</td>
</tr>
<tr>
<td>Intermediate</td>
<td>Read instructions on a prescription label and determine what time a person can take the medication; determine healthy weight from body mass index BMI chart</td>
<td>53%</td>
</tr>
<tr>
<td>Basic</td>
<td>Understand simple patient education handout</td>
<td>22%</td>
</tr>
<tr>
<td>Below Basic</td>
<td>Read a set of short instructions and identify what is permissible to drink before a medical test; circle date on appointment slip</td>
<td>14%</td>
</tr>
</tbody>
</table>

Health literacy levels as reported using 4 performance levels from the National Assessment of Adult Literacy (NAAL)
<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
<th>Number of items</th>
<th>Time to administer (min)</th>
<th>Scoring</th>
<th>Target audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid Estimate of Adult Literacy in Medicine (REALM)</td>
<td>Medical word recognition and pronunciation</td>
<td>66</td>
<td>2-3</td>
<td>≤3rd grade; 4-6th grade; 7-8th grade; ≥9th grade</td>
<td>Adults</td>
</tr>
<tr>
<td>Test of Functional Health Literacy in Adults (TOFHLA)</td>
<td>Reading comprehension of health-related information</td>
<td>67</td>
<td>20</td>
<td>Inadequate; marginal; adequate</td>
<td>Adults</td>
</tr>
<tr>
<td>Newest Vital Sign (NVS)</td>
<td>Asks questions about information found on a nutrition facts label</td>
<td>6</td>
<td>5</td>
<td>High likelihood of limited literacy; possibility of limited literacy; adequate literacy</td>
<td>Adults</td>
</tr>
<tr>
<td>Brief Health Literacy Screening Tool (BRIEF)</td>
<td>Asks questions about patient experience</td>
<td>4</td>
<td>3</td>
<td>Inadequate; marginal; adequate</td>
<td>Adults</td>
</tr>
<tr>
<td>Single Item Literacy Screener (SILS)</td>
<td>Single question to determine inadequate literacy</td>
<td>1</td>
<td>1</td>
<td>Inadequate; marginal; adequate</td>
<td>Adults</td>
</tr>
<tr>
<td>Literacy Assessment in Diabetes (LAD)</td>
<td>Diabetes word recognition test</td>
<td>60</td>
<td>3-5</td>
<td>≤4th grade; 5-8th grade; ≥9th grade</td>
<td>Adults</td>
</tr>
<tr>
<td>Brief Estimate of Health Knowledge and Action-HIV Version (BEHKA-HIV)</td>
<td>HIV knowledge assessment</td>
<td>8</td>
<td>3</td>
<td>Sum score only</td>
<td>Adults</td>
</tr>
<tr>
<td>Short Assessment of Health Literacy (SAHL)</td>
<td>Word recognition and comprehension test</td>
<td>18</td>
<td>2-3</td>
<td>Limited; adequate</td>
<td>Adults</td>
</tr>
</tbody>
</table>

HIV= Human Immunodeficiency Virus

Table 2. Health Literacy Assessment tools
Table 3. Recommendations for oral and written communication.\(^{34-36}\)

<table>
<thead>
<tr>
<th>Oral communication</th>
<th>Written Communication</th>
</tr>
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<tbody>
<tr>
<td>● Avoid medical terminology</td>
<td>● Use pictures/illustrations to explain concepts</td>
</tr>
<tr>
<td>● Keep conversations short and simple</td>
<td>● Assess reading level of patient materials (SMOG, Flesch-Kincaid)</td>
</tr>
<tr>
<td>● Use IHS model of 3 open-ended questions</td>
<td>○ use no more than 6-8th grade reading level</td>
</tr>
<tr>
<td>○ What did the doctor tell you this was for?</td>
<td>● Use written materials to augment oral communication, not to replace it</td>
</tr>
<tr>
<td>○ How did the doctor tell you to take this?</td>
<td></td>
</tr>
<tr>
<td>○ What did the doctor tell you to expect?</td>
<td></td>
</tr>
<tr>
<td>● Incorporate “show and tell” in counseling</td>
<td></td>
</tr>
<tr>
<td>● Encourage patients to ask questions, such as (Ask Me 3)</td>
<td></td>
</tr>
<tr>
<td>○ What is my main problem?</td>
<td></td>
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<tr>
<td>○ What do I need to do?</td>
<td></td>
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<tr>
<td>○ Why do I need to do this?</td>
<td></td>
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<tr>
<td>● Use the teach-back method</td>
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### Health Literacy: Implications and Practical Communication Strategies

**Corresponding Course Program Number:** 0171-9999-15-070-H04-P

1. Complete and mail entire page. SCPhA members can take journal CE for free; $15 for non-members. Check must accompany test. You may also complete the test and submit payment online at www.scrx.org.

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### Evaluation (circle the appropriate response)

1. Did the article achieve the stated objects? (Note at all) 1 2 3 4 5 (Completely)

2. Overall evaluation of the article? (Poor) 1 2 3 4 5 (Excellent)

3. Was the information relevant to your practice? (No) 1 2 3 4 5 (Yes)

4. How long did it take you to read the article and complete the exam? ____________

CE credit will ONLY be awarded when a submitted test is accompanied by completing the evaluation above or online at www.scrx.org.
Self-Assessment Questions

1. What percentage of the U.S. population is considered to be at a basic or below basic level of health literacy?
   a. 12%
   b. 22%
   c. 36%
   d. 53%

2. Limited health literacy is associated with:
   a. poor medication adherence
   b. lower use of preventative services
   c. more frequent emergency room visits
   d. all of the above

3. Those at greater risk for limited health literacy include:
   a. geriatric patients
   b. patients who speak English as a second language
   c. patients with low income
   d. all of the above

4. Which of the following assessment tools measures reading comprehension?
   a. REALM
   b. TOFHLA
   c. SILS
   d. LAD

5. This assessment tool uses a nutrition facts label to determine health literacy level.
   a. BEKHA-HIV
   b. SAHL
   c. NVS
   d. BRIEF

6. Methods to improve understanding of written communication for patients with limited health literacy include:
   a. Use of pictures/illustrations to explain concepts
   b. Assessing the reading level of patient materials
   c. Use of written materials to augment oral communication, not to replace it
   d. All of the above

7. Which of the following methods to improve oral communication is specifically designed to encourage patients to be more proactively involved in ensuring understanding of their health care?
   a. Ask me 3
   b. Teach back
   c. Show and tell
   d. IHS’s 3 prime questions