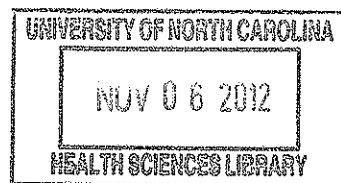# HANDBOOK OF

TEACHING

and LEARNING

for PHYSICAL

THERAPISTS

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PATIENT EDUCATION AND HEALTH LITERACY

Elizabeth Mostrom

CHAPTER OUTLINE

The following excerpts are drawn from reflective journals of students as they learn important lessons about patient education during clinical internships:

- *I had this one patient with neck and arm pain and she seemed really stressed out about the problem and worried that she might get worse with therapy. So I decided to keep her initial home exercise program really simple at first and I gave her only three very mild stretching exercises to do. Well, the next session she came back and I asked her to show me her exercises like she was doing them at home. I couldn't believe what I saw!! I could hardly recognize what she was doing! From now on, I am going to go very slowly when teaching exercises—I am going to have the patient show me the exercises several times in therapy and make sure that they have written home programs with pictures and simple explanations on them. I think I rushed my teaching with this patient and was too timid in my instructions because she was so worried about getting worse.[1(p 308)]*
- *If I have a hard time finding time to do trunk strengthening exercises [that I need to do], then don't my patients have a hard time finding time to do a home exercise program? I think that therapists, including me, forget that parents who have a child who needs to do a HEP have busy lives and may not have time to do the program with their child. If I can keep this in mind, I think I will have better success when it comes to designing a HEP and having the patient actually do it. Also, when I ask a parent or child if they have been doing the HEP, I have to be prepared for the "no's" and armed with the "why's" to do the program and the "how's" to fit it in.[1(p 309)]*
- *Another time I felt good was when I was describing to the patient what was happening with her. I got out the model of the spine and showed her the area from which the problem stemmed. I educated her on the discs and nerve roots.*

She really seemed to benefit from the discussion and learned a lot. She said it made her understand the purpose of her exercise program and of the treatments we were doing with her. It made me feel good because I felt effective.[1(p 309)]

LEARNING GOALS

After completing this chapter, the reader will be able to:

1. Describe the scope and breadth of the "literacy problem" in the United States and accurately identify specific patient populations seen in physical therapy who are at risk for low literacy.
2. Define and distinguish between the following terms: general literacy, literacy domains, literacy levels, health literacy, readability, suitability, and comprehension.
3. Discuss risk factors and behavioral cues that might indicate low health literacy in patients and identify appropriate methods for assessing and addressing their literacy needs to achieve desired educational and health-related outcomes.
4. Describe characteristics of effective verbal and nonverbal communication with patients that can create a shame-free clinical environment, facilitate the development of positive relationships, enhance learning, and foster comprehension.
5. Assess the literacy demands, readability, and suitability of written educational materials developed for patients using selected informal methods or formal tools and instruments.
6. Identify or develop home programs, instructional materials, or media resources that are appropriately designed to meet the learning needs and goals of patients and their care providers.
7. Describe and implement several teaching/learning activities that can link classroom instruction about patient education and health literacy with experiential learning in clinical settings.
8. Describe, design, and implement teaching/learning activities that provide opportunities for reflection and dialogue about patient education and health literacy during clinical experiences.

Through these excerpts we hear students reflecting on both failures and successes in patient education. How could an understanding of health literacy further inform the practice and teaching effectiveness of these students and of physical therapy clinicians? This is a question we will explore and address in this chapter.

CENTRALITY OF PATIENT EDUCATION TO EFFECTIVE CLINICAL PRACTICE AND ACHIEVEMENT OF DESIRED HEALTH OUTCOMES

Numerous documents directly related to physical therapy practice and education emphasize the centrality and importance of patient education in the everyday work of physical therapists.[2–6] The American Physical Therapy Association (APTA) *Guide to Physical Therapy Practice*[2] identifies patient/client instruction as a key component of intervention in the patient/client management model and defines patient/client related instruction as follows: "The process of informing, educating, or training patients/clients, families, significant others and caregivers is intended to promote and optimize physical therapy services. Instruction may be related to the current condition; specific impairments, functional limitations, or disabilities; plan of care; need for enhanced performance; transition to a different role or setting; risk factors for developing a problem or dysfunction; or need for health, wellness, or fitness programs. Physical therapists are responsible for patient/client related instruction across all settings for all patients/clients."[2(p 47)] This definition highlights the depth and breadth of a therapist's responsibility for effective teaching and promoting learning in clinical encounters in a wide variety of practice settings.

In addition, The Joint Commission standards for accreditation of hospitals and other health care organizations require that individual providers and organizations provide effective, "patient-centered" communications to optimize the quality of care delivered and ensure patient understandings and safety.[7] Those standards require, among other things, that education provided to patients is based on assessment of patient and family/caregiver needs (both clinical and communication needs), addresses their needs, is appropriate and adapted to the patient's level of understanding and abilities, and is delivered using a variety of instructional tools or methods, and that patient comprehension of educational information provided is evaluated. During the past decade, as the standards for patient-provider communication have been further developed and elaborated, The Joint Commission has also spearheaded several initiatives in this area that have culminated in reports that highlight the importance of addressing literacy issues and concerns as health care professionals and organizations serve an increasingly diverse and aging citizenry in the United States.[8–10]

Finally, the new *Healthy People 2020*[11] (HP 2020) framework and objectives encourage increased emphasis on health communication and the effective use of information technology to achieve the overarching goals of HP 2020. The broad goals of HP 2020 and selected health communication and information technology objectives are shown in Box 12–1.

Clearly, the time for focused attention on the health literacy of the patients, family members, and care providers we encounter in our daily work as physical therapists is here. Furthermore, as our scope of practice continues to expand in the realms of community-based education, health promotion, and wellness, attention to the health literacy of the larger population of individuals in our society is essential for us to be effective health educators. (See also Chapters 13 and 15.)

SCOPE AND MAGNITUDE OF THE "LITERACY PROBLEM" IN THE UNITED STATES

Surprisingly, focused attention on general literacy concerns, and more recently health literacy concerns, in the United States is a relatively recent trend in our history. In response to these concerns, however, the first nationwide assessment of adult literacy, the National Adult

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BOX 12–1   Healthy People 2020 Overarching Goals and Selected Related Health Communication and Health Information Technology Objectives

HEALTHY PEOPLE 2020 OVERARCHING GOALS

- Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death.
- Achieve health equity, eliminate disparities, and improve the health of all groups.
- Create social and physical environments that promote good health for all.
- Promote quality of life, healthy development, and healthy behaviors across all stages of life.

SELECTED HEALTH COMMUNICATION AND HEALTH INFORMATION TECHNOLOGY OBJECTIVES

- Improve the health literacy of the population.
- Increase the proportion of persons who report that their health care provider always gave them easy-to-understand instructions about what to do to take care of their illness or health condition.
- Increase the proportion of persons who report that their health care provider always asked them to describe how they will follow the instructions.
- Increase the proportion of persons who report that their health care provider's office always offered help in filling out a form.
- Increase the proportion of persons who report that their health care providers have satisfactory communication skills.
- Increase the proportion of persons who report that their health care provider always listened carefully to them.
- Increase the proportion of persons who report that their health care provider always explained things so that they could understand them.
- Increase the proportion of persons who report that their health care provider always showed respect for what they had to say.
- Increase the proportion of persons who report that their health care provider always spent enough time with them.
- Increase the proportion of persons who report that their health care provider always involved them in decisions about their health care as much as they wanted.
- Increase the proportion of persons whose doctor recommends personalized health information resources to help them manage their health.

BOX 12-2   Functional Tasks Needed to Access, Understand, and Use Information

- Prose tasks: The knowledge and skills needed to understand and use information from text materials such as newspapers, magazines, books, brochures, etc.
- Document tasks: The knowledge and skills needed to find, interpret, and use information from documents such as applications, forms, maps, transportation schedules, charts, etc.
- Quantitative tasks: The knowledge and skills required to read, interpret, and work with numerical information and apply mathematics to calculate or reason numerically such as reading nutrition labels and calculating calories, computing restaurant bills and tips, balancing a checkbook, etc.

Literacy Survey (NALS), was conducted by the U.S. Department of Education in 1992. That survey and a 10-year follow-up study, the 2003 National Assessment of Adult Literacy (NAAL), revealed a high prevalence of illiteracy and low literacy in the United States.[12-14] The NALS and the NAAL defined general literacy as, "Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential."[14]

In the 2003 NAAL, the literacy skills of a representative sample of about 20,000 adults (defined as 16 years or older) were measured in three domains. These domains represent three functional tasks that individuals would need to access, understand, and use information (Box 12-2).

In the NAAL, the degrees of difficulty for literacy tasks in these the domains were identified as below basic, basic, intermediate, or proficient. Brief descriptions of these levels and the findings from the 2003 NAAL are shown in Table 12-1. Note that 55% of the sample population was determined to be at the basic or below basic level for quantitative tasks; 43% of the sample population was determined to be at the basic or below basic level for prose tasks; and 34% of the sample population was determined to be at the basic or below basic level for document tasks. If you think about the kinds of tasks patients are required to do in the course of clinical care, those individuals at the basic or below basic level (55% in the quantitative category, 43% in the prose category) might experience significant difficulty completing intake forms, comparing drug plans, identifying what they may or may not drink or eat before a medical test, or following written instructions on prescriptions to determine correct dosages. Even those individuals at the intermediate level (53% in the document

category, 44% in the prose category) may have difficulty fully understanding insurance forms and plans, consent forms, and medication and other health care instructions.

In the 2003 NAAL, a health literacy scale was included, and tasks specific to health literacy were assessed nationwide for the first time. The development of this scale and the tasks included in the assessment were guided by a definition of health literacy that had been adopted by the Institute of Medicine[15] and used by Healthy People 2010.[16] Health Literacy was defined as, "[t]he degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions."[15(p 32)] The health literacy tasks in the NAAL were distributed across three domains of health care services or information:

1. Clinical care (e.g., understanding health or medication dosing instructions or filling out a form)
2. Prevention services and information (e.g., following guidelines for prevention services such as immunizations)
3. Navigation of the health care system (e.g., understanding an insurance plan or determining eligibility for assistance)

In each of those domains, literacy tasks were identified as primarily prose, document, or quantitative tasks.

The health literacy results of the NAAL were published in 2006[17] and underscored the need for health care professionals, health care organizations, and the health care system as a whole to "take health literacy seriously."[18,19] The overall findings are shown in Figure 12-1 and indicated that 36% of adults in the sample (representing more than 75 million adults) had basic or below basic levels of health literacy: this means their overall literacy skills were at about an 8th-grade level or below. Of these individuals, 14% were measured at the below basic level and would be considered functionally illiterate when dealing with health information. Fifty-three percent of the individuals in the sample (representing about 114 million adults) were rated in the intermediate level of health literacy (about 10th- to 12th-grade level), and only 12% of the population was considered proficient (see Figure 12-1). Two percent of the individuals in the NAAL sample (representing about 4 million adults) had language barriers that prevented participation and were unable to be measured. Those individuals were categorized as nonliterate in English, although it is important to note that they may be literate in their

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TABLE 12-1   Descriptions of Literacy Levels and Findings from the 2003 National Assessment of Adult Literacy

| Literacy Level	Prose (%)	Document (%)	Quantitative (%)	Approximate Grade Level (Prose)
Below basic: non-literate in English or only able to complete easy, concrete literacy tasks	14	12	22	About 5th grade or below
Basic: able to complete simple everyday literacy tasks	29	22	33	About 8th grade
Intermediate: able to complete moderately challenging literacy tasks	44	53	33	About 10th grade to high school
Proficient: able to perform complex and challenging literacy tasks	13	13	13	About high school graduate – to college
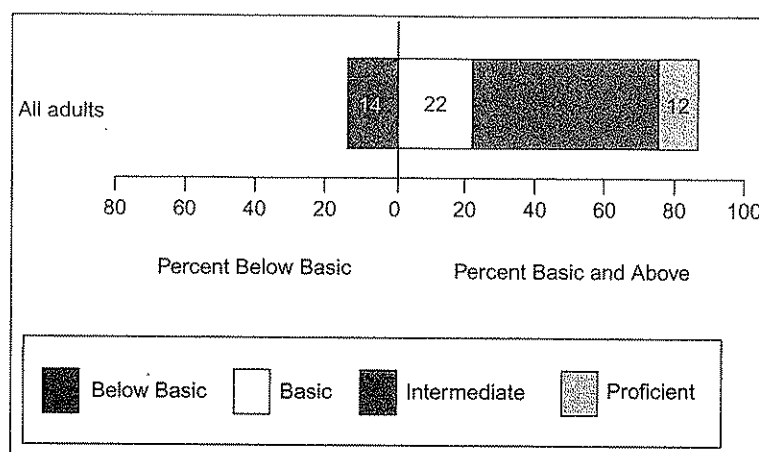
FIGURE 12–1 Percentage of adults in each health literacy level. (From National Center for Education Statistics. The Health Literacy of America's Adults: Results from the 2003 National Assessment of Adult Literacy. Washington, DC: U.S Department of Education, Institute for Education Sciences, 2006.)

primary language. The findings also identified several risk factors and populations at risk for low health literacy, and these will be discussed further in the next sections of this chapter.

The good news that emerges from these rather disturbing findings is that there has been increasing attention given to addressing the health literacy problem in the United States, and many initiatives have been undertaken to make health information more accessible, clear, and understandable in all forms (oral, visual, and textual) so that a much larger percentage of the population can evaluate, use, and benefit from the information provided by health care professionals. There is a clear realization that we must not only address health literacy concerns but also move as rapidly as possible toward solutions at the level of individual providers, health care organizations and systems, and health policy makers. This vision and commitment are captured in a summary in the National Action Plan to Improve Health Literacy: "By focusing on health literacy issues and working together, we can improve the accessibility, quality, and safety of health care; reduce costs; and improve the health and quality of life of millions of people in the United States."[20]

IMPLICATIONS OF LOW LITERACY FOR INDIVIDUAL AND PUBLIC HEALTH

It is likely that the readers of this chapter are individuals who have at least college-level education and beyond. Think about some of your own encounters in the health care system over the past few years. Have there been times when you were uncertain about or confused by health information provided to you? When, exactly, to take a medication? What food or drink you should avoid before a medical test? How and when, exactly, to do a prescribed activity? Have you ever been befuddled by the language used in various forms you were asked to sign when consenting to care? Or explaining your HIPAA rights? Now, think about individuals trying to understand the complex instructions often given by health care providers or

navigating the health care system with substantially lower literacy skills than you have. What might be their understandings—or misunderstandings? Could misunderstandings have serious consequences? What happens if the "signals" they receive from health care providers are confusing or not accurately interpreted as they were intended?

The reader is encouraged to view several videos available on health literacy at the American Medical Association (AMA) website entitled, "Low Health Literacy: You Can't Tell by Looking" and "Health Literacy and Patient Safety: Help Patients Understand." An additional video by the Institute of Medicine entitled, "Health Literacy: A Prescription to End Confusion" is available on YouTube. These videos will help students and clinicians gain a clearer sense of the personal experiences of individuals with low literacy skills in our health care system.

There is a large and growing body of literature that suggests links between low literacy and poor health outcomes, but it is beyond the scope or intent of this chapter to review all of that literature. A report from the Agency for Health Care Research and Quality (AHCRQ), however, provides a review of evidence and a summary of the many links between low literacy and poor health outcomes, health status, and health disparities.[21,22] What we do know from the literature is that low health literacy can lead to low health knowledge and understanding and thus less healthy behaviors, safety concerns for patients and others involved in their care, disparities in access to and quality of care delivered, and greater health costs for individuals and society. We also know that "literacy skills are a stronger predictor of an individual's health status than age, income, employment status, educational level, and racial or ethnic group."[23,24] Given the high prevalence of low health literacy skills in our population and the health and societal consequences associated with low literacy, it is incumbent on all health professionals to respond. We must do this in order to address the patient's right to and need for clear communication about their health, to reduce the potential for error and increase patient safety, to enhance the quality of health care services, and to contain health care costs.

WHAT CAN WE DO TO BE EFFECTIVE COMMUNICATORS AND TEACHERS AND FOSTER PATIENT LEARNING?

RECOGNIZING POPULATIONS AT RISK, RISK FACTORS, AND HEALTH LITERACY CHALLENGES

Based on the findings from the health literacy component of the 2003 NAAL,[14,17] we know several groups of individuals are at higher risk for health literacy concerns (Table 12–2).

A quick review of the list in Table 12–2 suggests that many of the individuals we see in our clinics on a daily basis may fall into several of these groups or present with several risk factors for low health literacy concurrently. Being aware of the potential for health literacy concerns is a first step toward responding appropriately but much more is needed. In the following section, we will discuss several strategies and tools clinicians can use for assessing health literacy.

ASSESSING HEALTH LITERACY: INFORMAL ASSESSMENTS

Physical therapists and rehabilitation and health professionals in general are excellent observers. Combined with our recognition of the prevalence of low health literacy in the U.S. population, we can use our keen observational and interviewing skills to identify clues for low literacy or alert us to "red flags." Picking up on these clues and identifying red flags will allow us to adapt our educational interventions to better meet the needs of our patients. Table 12–3 provides a list of some red flags that you may have encountered in your interactions with patients. Can you identify others?

Some of the behaviors and responses described in Table 12–3 may be due to many patients with low literacy feeling ashamed about their difficulty reading and trying to hide it—even from family members in some cases.[25,26] Because of the potential for shame or stigma, patients may also be hesitant to admit to health professionals that they have difficulty reading or understanding health information. Therefore, we need to develop strategies for assessing and addressing literacy concerns by creating clinical environments and encounters that are "shame free" and reduce the potential for embarrassment or humiliation of the patient.

Therapists can use the social history and the subjective portion of their examination to screen for possible literacy concerns for their patients. For example, as you review information available to you in the medical chart, intake forms, or referrals, be alert for the risk factors identified in Table 12–2. If any of those factors are or may be present, then be on heightened alert for the behaviors listed in Table 12–3. It is also important to remember that stress associated with illness, injury, and disability, in and of itself, can create barriers to communication and understanding of complex health information.

As you conduct the subjective portion of the examination, try to ask questions that would get at the potential for literacy problems while being as nonthreatening as possible to the patient. Some suggestions for questions that may be useful and help to open the door for the patient to discuss their abilities in this realm are shown in Box 12–3.

The last three questions in Box 12–3 were identified by Chew and colleagues[27] as effective screening questions for identifying patients with insufficient health literacy (below basic level), although they were less effective in identifying individuals with marginal health literacy (5th- to 8th-grade level, basic level). In a follow-up study, Wallace and colleagues[28] found that the single most useful question for screening for limited and marginal literacy was the last question in Box 12–3 regarding confidence in filling out medical forms.

Finally, it is worth noting that merely asking the patient's highest school grade completed or educational level is not always the best indicator of their actual literacy skills. There can be a 2- to 5-year discrepancy between grade level attained and a patient's true reading abilities.[29] That is, someone could have completed 10th grade but still read at 5th- or 6th-grade level (basic or below basic). It is also important to note that oral communication skills may be far better than reading skills for an individual with low literacy.

Another informal method for assessing literacy skills is to complete a medication review with the patient. Although some may view this activity as more the purview of nurses, physicians or physician's assistants, or pharmacists, in today's health care environment where therapists have direct access to patients/clients and responsibility for medical screening and keep-refer decision making, a medication review can be an invaluable clinical and literacy screening tool. Completing a medication review simply requires that you ask patients to bring their medications to therapy and then spend time talking with your patients about their medications. During the discussion, you can asses the patients' understanding of what medications they are taking, why they are taking them, when they are taking them, and how they are taking them (e.g., with or without food). Once completed, you will have valuable information that will guide the development of appropriate interventions and monitoring strategies from both a clinical *and* literacy perspective. As noted earlier, patients with low health literacy may rely on the visual appearance of the pill or a few letters in the name of the medication to identify what they are taking. They may not know what the medication is for or how or when to take it and may become confused when asked about their medications. An excellent example of a medication review conducted with a patient with low health literacy can be viewed in the AMA video referred to earlier in this chapter, "Health Literacy and Patient Safety: Help Patients Understand" and available on YouTube.

ASSESSING HEALTH LITERACY: FORMAL ASSESSMENTS

There are also formal testing tools that have been developed to screen for low health literacy skills in patients. Many of the tools are used primarily for research purposes and are too lengthy or unwieldy to realistically use in clinical practice. Furthermore, the administration of some tests for literacy may be threatening to individuals with low literacy skills and increase the potential for feelings of shame or stigmatization. For the purposes of this chapter, I introduce two tools that are brief and easy to use in clinical settings: The Newest Vital Sign (NVS) and several versions of the Rapid Estimate of Adult Literacy in Medicine (REALM)

TABLE 12-2 Individuals at Higher Risk for Health Literacy Concerns

Population	Characteristics
Older adults	Adults who are 65 years old or greater had lower average health literacy than those who were younger. The physical changes associated with aging are likely to contribute to or compound this problem—visual changes, hearing loss, cognitive changes, etc. More than 60% of individuals 65 years or older were at the basic or below basic level.
People with low incomes or living at or below the poverty line	Adults living at or below the poverty line had lower average health literacy than those above the poverty line.
People with less than a high school degree	Average health literacy increases with each higher level of education attained starting with high school graduates or individuals with a GED. Below basic health literacy comprised 49% of adults who had never attended or completed high school.
Racial and ethnic minorities	Hispanic adults had lower average health literacy than black, American Indian/Alaska Native, and multiracial adults. Whites and Asian/Pacific Islander adults had higher average health literacy than all of those groups.
Non-native speakers of English	Individuals who spoke only English before starting school had higher average health literacy than those who spoke English and another language or only another language before starting school.
Male Gender	Men had lower average health literacy than women. Sixteen percent of men were in the below basic category compared with 12% of women.
Persons on Medicare, Medicaid, or uninsured	Adults who received Medicare or Medicaid and adults who had no insurance had lower average health literacy than adults who were covered by other types of insurance (employer provided, privately purchased, or military).
Individuals with chronic disease or disability	Adults who had chronic disease or disability had lower average health literacy than those who did not.

TABLE 12-3 Some Clues and Red Flags that Might Suggest Low Health Literacy

	Behaviors You Might Observe	Things a Patient Might Say
Reading behaviors	Lifts texts closer to face when reading Points to and follows text with finger while reading Eyes wander over page without finding central focus Slow reading; asks someone else to read text/form for them Signs forms without reading Struggles with more than one piece of information or paper at a time May get frustrated with multiple forms, leave the clinic or waiting room	"I forgot (lost, broke) my glasses, can you read this to me?" "My eyes are tired, I'll read this when I get home." "I'm having trouble seeing." "The lighting is not good." "I don't feel well, will you read this for me?"
Self-care behaviors	Unable to name medications, explain why they take them or when/how to take them. Identifies medications by color and size of pill, not by name or reading labels Makes errors or lacks follow-though on self-care instructions such as exercise prescriptions, therapy recommendations, or medication regimens; may appear or be labeled nonadherent/noncompliant Misses appointments or arrives at the wrong times for appointments Resists filling out forms or activity logs; forms are incomplete or incorrectly filled out Waits until illness or problem is advanced before seeking help	"I just put them in my daily/weekly container—I don't need to know the names of my pills." "I lost/can't find my instruction sheet." (exercise or activity log) "Could you just draw pictures of the exercises for me?" "I lost my appointment card." "Could I have my appointments on the same days and at the same time?" "I was too busy to get help." "I don't have time."
Communication behaviors	Shows signs of nervousness or frustration May not answer questions or incorrectly answer questions; demonstrates differences between what is heard and read Is very quiet, passive Nods head in response to information but doesn't ask any questions in follow-up Asks a lot of questions, possibly out of context, about information provided previously or in written materials	In response to questions from the health care provider like "Do you understand?" or "Does that make sense?" always answers "Yes" without further questions In response to questions like "Do you have any other questions?" frequently answers "No"

Data from Area Health Education Clear Health Communication Program, The Ohio State University. You Can't Tell By Looking: Assessing a Patient's Ability to Read and Understand Health Information. Columbus, OH: The Ohio State University, Office of Outreach and Engagement, 2007.

(revised and short forms). Information on other literacy assessment instruments can be found in Appendix 12-A.

The Newest Vital Sign

The NVS is a tool developed by Weiss and colleagues[30] to be used as a quick screen for literacy in primary care settings. As indicated by the name of the instrument, the authors suggest that this screen could be something included in routine intake assessments with many patients in the same way we assess other vital signs like blood pressure, heart rate, and respiratory rate. The NVS has been found to be a "reliable and accurate measure of literacy with high sensitivity for detecting persons with limited literacy."[30,31]

The NVS consists of an ice cream nutrition label that the patient is asked to review and then answer a series of six questions regarding information in the label (Figure 12-2). The NVS instrument is also available in Spanish. A glance at the label and questions will reveal that the NVS assesses all three dimensions of literacy: prose, document, and quantitative (or numeracy). The NVS takes only about 3 minutes to administer, and a laminated copy of the labels, score sheets, and administration and interpretation instructions are available from the Pfizer Clear Health Communication Initiative.

Rapid Estimate of Adult Literacy in Medicine

The original version of the REALM was a 66-item (medical and health related terms) instrument that a patient was asked to read.[32,33] Terms were listed in three columns, and the tester then scored the individual based on his or her ability to read and correctly pronounce words on the lists. A revised and abbreviated form of the REALM, the REALM-R, was introduced in 2003.[33] This shortened version correlated with other literacy assessments and the longer REALM but had only 8 items (medical terms)

and took only 2 minutes or less to administer. The terms included osteoporosis, allergic, jaundice, anemia, fatigue, directed, colitis, and constipation. Testers could also add words pertinent to specific realms of care, such as terms related to the management of hypertension, and still keep the time for administration under 2 minutes.

Based on research conducted for an Agency for Health Care Research and Quality (AHRQ) grant, an additional shortened version of the REALM was posted to the agency website in 2008—the REALM Short Form or REALM-SF. This form of the REALM includes only 7 items and is shown in Figure 12-3. The REALM-SF and another assessment of health literacy for adults who are Spanish speaking, the Short Assessment of Health Literacy for Spanish Adults (SAHLSA-50) can be found online at the AHRQ website. Both of these instruments have been field-tested and have been shown to have excellent agreement with the longer 66-item REALM instrument in terms of grade-level assignments.

DEVELOPING APPROPRIATE EDUCATIONAL INTERVENTIONS AND MATERIALS

How many times have you experienced the same kind of feelings and thoughts expressed by the student in the first vignette at the beginning of this chapter? You thought you had explained an exercise program very clearly to a patient, but when they return to the clinic and you ask them to demonstrate their exercises, there was clearly some confusion! Something was definitely "lost in translation." Could limited health literacy have been one possible reason?

Now that you have some strategies and tools for recognizing literacy concerns in your patients, we'll turn to other techniques and strategies you can use to enhance communication, learning, and understanding for your patients in face-to-face encounters and through the development or identification of appropriate, accessible, easy-to-read patient educational materials.

FACE-TO-FACE COMMUNICATION AND TEACHING STRATEGIES

As noted earlier, many individuals with low literacy skills are embarrassed and ashamed about their inability to read and understand health-related information.[26] This may lead to attempts to hide their lack of understanding resulting in poorer health outcomes from both the provider and patient perspectives. To be most effective in our communication with patients with low literacy skills, we need to create shame-free and patient-centered environments and adopt approaches to interaction and teaching that diminish the potential for patient embarrassment or humiliation. For that matter, if we adopt such approaches in our interaction with *all patients*, we, and they, would likely realize more positive clinical outcomes.

To create a shame-free environment, it is important to be attentive to the continuum of the experience of the patient in the health care system—from the initial referral and scheduling of an appointment with a provider, to check-in procedures, through the clinician-patient

Score Sheet for the Newest Vital Sign
Questions and Answers

READ TO SUBJECT:
This information is on the back of a container of a pint of ice cream.

	ANSWER CORRECT?	
	yes	no

1. If you eat the entire container, how many calories will you eat?
   Answer: 1,000 is the only correct answer

2. If you are allowed to eat 60 grams of carbohydrates as a snack, how much ice cream could you have?
   Answer: Any of the following is correct: 1 cup (or any amount up to 1 cup), half the container. Note: If patient answers "two servings," ask "How much ice cream would that be if you were to measure it into a bowl?"

3. Your doctor advises you to reduce the amount of saturated fat in your diet. You usually have 42 g of saturated fat each day, which includes one serving of ice cream. If you stop eating ice cream, how many grams of saturated fat would you be consuming each day?
   Answer: 33 is the only correct answer

4. If you usually eat 2,500 calories in a day, what percentage of your daily value of calories will you be eating if you eat one serving?
   Answer: 10% is the only correct answer

READ TO SUBJECT:
Pretend that you are allergic to the following substances: penicillin, peanuts, latex gloves, and bee stings.

5. Is it safe for you to eat this ice cream?
   Answer: No

6. (Ask only if the patient responds "no" to question 5): Why not?
   Answer: Because it has peanut oil.

Number of correct answers:

Interpretation
Score of 0-1 suggests high likelihood (50% or more) of limited literacy.
Score of 2-3 indicates the possibility of limited literacy.
Score of 4-6 almost always indicates adequate literacy.

Nutrition Facts

Serving Size	½ cup
Servings per container	4

Amount per serving

Calories	250	Fat Cal	120

	%DV
Total Fat 13g	20%
Sat Fat 9g	40%
Cholesterol 28mg	12%
Sodium 55mg	2%
Total Carbohydrate 30g	12%
Dietary Fiber 2g	
Sugars 23g	
Protein 4g	8%

*Percentage Daily Values (DV) are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Ingredients: Cream, Skim Milk, Liquid Sugar, Water, Egg Yolks, Brown Sugar, Milkfat, Peanut Oil, Sugar, Butter, Salt, Carrageenan, Vanilla Extract.

FIGURE 12–2 Newest Vital Sign label (**A**) and Score Sheet (**B**). (From Pfizer Clear Health Communication Initiative, 2007. Available at: http://www .clearhealthcommunication.com/public-policy-researchers/NewestVitalSign.aspx.)

REALM-SF Form

Patient name _____ Date of birth _____ Reading level _____

Date _____ Examiner _____ Grade completed _____

Menopause	☐
Antibiotics	☐
Exercise	☐
Jaundice	☐
Rectal	☐
Anemia	☐
Behavior	☐

Instructions for Administering the REALM-SF

1. Give the patient a laminated copy of the REALM-SF form and score answers on an unlaminated copy that is attached to a clipboard. Hold the clipboard at an angle so that the patient is not distracted by your scoring Say:

   "I want to hear you read as many words as you can from this list. Begin with the first word and read aloud. When you come to a word you cannot read, do the best you can or say, 'blank' and go on to the next word".

2. If the patient takes more than 5 seconds on a word, say "blank" and point to the next word, if necessary, to move the patient along. If the patient begins to miss every word, have him or her pronounce only known words.

FIGURE 12–3 REALM Short Form (From Agency for Healthcare Research and Quality. Available at: http://www.ahrq.gov/populations/sahlsatool.htm.)

encounter itself, and to follow-up procedures. During the initial scheduling of the appointment, ensure that patients have simple directions or maps to locate the clinic if needed and be clear about what you would like them to bring to their first appointment (e.g., medications or medication lists, copies of any test reports or health records that they have). Look around the agency and your clinic space. Are building markers, signage, directions, and maps simple, clear, and easily visible? Are information desks or reception areas clearly marked, easily accessible, and staffed by people willing and able to direct patients to where they need to go? Is your clinic area clearly marked and identifiable? Making changes to decrease the stress associated with just getting to a clinic appointment will help all patients. One strategy that is widely used in very large clinical settings is colored stripes on walls or floors or other visual images that direct patients to various areas of the hospital or clinic.

Once patients arrive at your clinic, reception staff and others who interact with the patient need to be aware of patient populations that might be at risk for literacy concerns (see Table 12–2) and watch for signs that would indicate literacy problems (see Table 12–3) during check-inprocedures. With all patients, but especially patients with low literacy, it is important to convey an attitude of respect, caring, and sensitivity, and a willingness to assist patients as needed. Because reading and filling out forms (registration, insurance, HIPAA, intake, and consent forms) can be very challenging for individuals with low literacy, offer to assist patients in the completion of forms. If providing assistance, move to a private area away from the immediate waiting room area. It would also be helpful to re-evaluate the forms used during check-in and simplify them as much as possible by using plain language and formatting them to make them easy to read. Writing in plain language requires that information presented is clear, simple, to the point, and directed toward the target audience. There are numerous resources available with principles, guidelines, and tips for the use of plain language in both written and oral communication.[24,33–38] One example of these, specifically related to health forms, is a resource available through the Health Resources and Service Administration (HRSA) on making HIPAA privacy notices more readable.[39]

Once you meet your patient and begin the therapy session, there are several communication and teaching strategies you can employ to help your patient feel comfortable and to facilitate learning and understanding (Box 12–4). Two of these suggestions will be discussed in more detail: (1) the key elements of plain language, and (2) the *teach-back technique*, also referred to as the *interactive communication loop*.

Plain Language

Although the term *plain language* might seem self-explanatory, there are several important elements of plain language that you can use when interacting with patients in the clinic. As noted in Box 12–4, it is important to limit the amount of new information provided to the patient in one teaching session; try to determine what is essential—what the patient truly needs to know or do right now. Once priorities are determined, slow down when

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BOX 12-4   "Shame-Free" Communication and Teaching Strategies

- When gathering and providing information, move to a private area to decrease the potential for embarrassment.
- Reassure the patient that many people have difficulty understanding complex health information and medical terms; convey patience through verbal and nonverbal messages when talking with the patient and be willing to repeat or rephrase information if indicated.
- Sit down with the patient at their level and face them when speaking to them.
- Observe and listen carefully to the patient and invite questions in follow-up to information you provide; be attentive and respond to quizzical looks or other nonverbal messages that suggest confusion or a lack of understanding.
- Don't overwhelm the patient with too much information. Identify the priority information and try not to present more than three key points at a time.
- Use "plain language" that is clear, simple, and direct.
- Use the "teach-back" method to check for patient understanding. Ask the patients to tell you or show you what they have learned.
- Provide easy-to-read materials to support and reinforce information you have given.

From Area Health Education Clear Health Communication Program, The Ohio State University. Creating a Shame-Free and Patient-Centered Environment for Those with Limited Literacy Skills. Columbus, OH: The Ohio State University, Office of Outreach and Engagement; 2007; and Pfizer Clear Health Communication Initiative. Help Your Patients Succeed. 2007.

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delivering information and instructions and frame the information. Think of framing as the front and back cover of an informational pamphlet. On the front page, you want to let the readers (learners) know what you are going to tell them and why it is important to them. On the back page, you want to reiterate the message and re-emphasize the importance to the patient. This is exactly what you can do in your teaching sessions with patients.

When delivering new information or instructions, use short and simple terms that would be familiar to the patient and used in their everyday language as opposed to using medical terms, physical therapy lingo, or jargon. One strategy that is useful in physical therapy is to use analogies to name and describe exercises you are teaching the patient. For example, when assessing or teaching patients tandem walking, you might demonstrate and call this activity "heel-to-toe walking" or "walking the tight rope." What simple name can you give a shoulder flexion exercise that uses terms most people would be familiar with? Another strategy for increasing understanding and fostering remembering is to let patients name the exercise using their own words once they understand the movement you are asking them to perform. Just ask them: "If you were naming this exercise, what would you like to call it?" For example, a cervical rotation movement to the left for a patient with vestibular dysfunction might become "checking your blind spot" if the patient drives a car.

Sometimes even simple terms that we might use in therapy can be confusing because they have more than one meaning. For example, when we talk about "gait" with our patients, they may be thinking "gate." Most people will understand "walking" pattern before they will understand gait pattern or the term *ambulation*. An excellent resource on the types of words that can create misunderstandings for patients (medical words, concept words, category

words, and value judgment words) and examples of "problem words" to avoid ("Words to Watch") and words to use instead can be found at the National Patient Safety Foundation's website.

Although using plain language will help your patients at the outset, it is still helpful to repeat and rephrase information to assure that the message was received as intended. Other supports to the verbal delivery of information are the use of demonstration, visual images or models, audiovisual resources, and written materials.

At the conclusion of a session, make sure to allow time for the patient to ask questions but try not to ask, "Do you have any questions?" This question invites a "no" response if the patient is confused by information and potentially embarrassed by the fact that they don't fully understand what has just been said or taught. Instead you might say: "I have given you a lot of information today! What questions do you have for me now?"

One clear health communication initiative that focuses on encouraging patient questions about their health care is the "Ask Me 3" intervention.[40] This patient education program promotes three questions that patients should ask their physicians or other health care providers:

1. What is my main problem? (focus on diagnosis or major problem)
2. What do I need to do? (focus on instructions or interventions)
3. Why is it important for me to do this? (focus on creating a context for instructions and adherence)

The other important component of this initiative, of course, is to encourage health care providers to formulate clear and direct answers to these questions from patients.

In addition to providing patients with opportunities to ask questions for clarification, it is helpful to verify understanding of information using a teach-back technique.

Teach-Back Technique

The teach-back technique, also referred to as the interactive communication loop, is a strategy you can use to assess or verify a patient's understanding of instructions or information you have provided to them.[41,42] A similar technique has also been referred to as a *tell-back collaborative inquiry* method.[43]

An example of a physician using a teach-back technique with a patient following instructions regarding medication can be seen in the AMA video referred to earlier in this chapter, "Health Literacy and Patient Safety: Help Patients Understand" and available on YouTube. The following is an example of how the teach-back technique might be used in a physical therapy session for a patient with low back pain due to poor posture in prolonged sitting (Box 12–5).

An excellent Clear Health Communication Checklist for health care providers that incorporates the principles of plain language and the teach-back method described earlier can be found at the Health Literacy section of the Pfizer website. This simple resource would be an excellent tool for all therapists who wish to ensure they are communicating with their patients in a way to optimize patient learning and understanding.

BOX 12–5   Example of the Teach-Back Technique in a Therapy Session

- Step 1—Clinician explains new concept:
  - The therapist introduces the concept of the importance of maintaining lumbar lordosis (a "forward curve in your low back") in sitting, provides a lumbar support cushion, and demonstrates its use when sitting at work, at home, and in the car. She also explains to the patient why this position should help decrease his postural back pain and when the cushion should be used throughout the day.
- Step 2—Clinician assesses patient recall and comprehension:
  - Near the conclusion of the session, the therapist says, "I want to be sure I explained things well in therapy today and that you don't have any further questions at this time. Can you tell me, in your own words, why changing your sitting position and using the cushion might help decrease your back pain?" The therapist also asks the patient to demonstrate the placement of the cushion in a chair and asks the patient to tell her when and where they will use the cushion when they return home. The patient is able to correctly explain why the use of the cushion might help and demonstrates correct placement of the cushion, but is confused about when, where, and how long he should use the cushion.
- Step 3—Clinician clarifies and tailors the explanation to the patient:
  - Because the patient had most discomfort after long periods of time sitting at work and when driving more than 1 to 2 hours, the therapist now reviews her recommendations for using the cushion at all times when at work and when driving and clarifies her suggestions for standing or taking a brief break from driving at least every hour.
- Step 4—Clinician reassesses patient recall and comprehension:
  - After additional instruction and review, the therapist asks the patient to tell her, in his own words, when he will be using the cushion when he goes to work or gets in the car. This time the patient responds correctly, and the therapist reinforces the response using positive feedback.
- Step 5—Patient correctly recalls and comprehends the instruction:
  - This recall and reinforcement should increase the possibility for adherence to the therapist's recommendations and hopefully lead to a reduction in the patient's back pain.

DESIGNING AND EVALUATING PATIENT EDUCATION MATERIALS: HELPING YOUR PATIENTS TO LEARN FROM WRITTEN MATERIALS

As noted previously, an important support to and extension of teaching and learning in the clinic is the provision of written materials or resources for your patients to take with them when they leave the clinic. These materials can take many forms, such as patient information sheets or brochures, home exercise programs, activity or exercise logs, or audiovisual materials. In some cases, you will develop your own patient education materials, and in other cases, you will be selecting other prepared patient education materials to use with and for your clients. In either situation, it is important to create or choose materials that will be easy to read, accessible, and understandable for your patients. In this section, we review three types of assessments you can use to evaluate the clarity, difficulty, and suitability of patient education materials: (1) the use of checklists of attributes of written materials, (2) some commonly used readability formulas to determine literacy demands and grade level estimates of textual materials, and (3) suitability assessments of materials (SAM).[37]

CHECKLISTS OF ATTRIBUTES OF WRITTEN MATERIALS

Simple checklists provide one method for determining whether written materials you are developing or considering for adoption, purchase, and dissemination have attributes that will make them easy to read and effective educational tools.[37]

These checklists help you to assess attributes of written materials in four general categories: (1) organization of the materials (including amount of information provided), (2) writing style (including the use of active voice and plain language), (3) appearance (including print type and size and use of illustrations), and (4) appeal and suitability. Although this checklist was originally developed for print materials, it can be adapted for use with audiovisual materials as well. Doak and colleagues' book[37] and the checklist can be accessed online at the Harvard School of Public Health website.

Another useful checklist is a "Plain Language Checklist" developed through the Ohio State University AHEC Clear Health Communication Program. This checklist is also available online. It identifies criteria to assess in written materials that also fall into four main categories: content, organization, language and writing style, and design and appeal.

READABILITY ASSESSMENTS: THE SMOG AND FRY FORMULAS

Given the demographic data on literacy of the U.S. population discussed earlier in this chapter, it should be evident that patient education materials that are written at the 4th- to 5th-grade level would be more likely to improve readability and subsequent understanding for many of our patients and thus increase health literacy. Most patient education materials, however, are often written at the 8th-grade level or higher, with the average falling between the 10th- and 12th-grade levels.

Readability formulas can help you to specifically assess the reading difficulty of written materials, and most formulas are easy to use. Readability formulas usually look at two key features of text (vocabulary difficulty as assessed by the number of polysyllabic words and sentence length) to determine the level of difficulty and result in a numerical score that represents a grade level approximation for the material (plus or minus one grade level). It is important to note, however, that readability formulas test only readability. They do not tell you whether the material is accurate, organized, formatted to make it appealing and attractive, or appropriate for various populations (i.e., address gender, ethnic, cultural, language, age, or developmental issues). Thus, readability is just part of the overall assessment of educational materials, albeit an important part.

There are numerous readability formulas available, but for the purpose of this chapter, we review two common and easy-to-use tools: the Simple Measure of Gobbledygook (SMOG) formula and the FRY readability test/graph.

SMOG Grading Formula

The SMOG is one of the easiest, fastest, and most accurate predictors of readability. It was developed in 1969 by G. Harry McLaughlin[44] and can be applied to long texts (30 sentences or greater) and shorter texts (less than 30 but greater than 10 sentences). It can be easily calculated by hand in a short amount of time or can be completed by using a SMOG calculator available online at Dr. McLaughlin's website. (See Box 12–6 for instructions for hand calculation of SMOG values).

An alternative to the last two steps described in Box 12–6 is to use SMOG Conversion Tables to find the grade level of materials. SMOG Conversion Tables for long texts (conversion table I) and short texts (conversion table II) and additional guidelines for completing SMOG assessments can be found online or in a resource from the Ohio State University AHEC Clear Health Communication Program entitled, "Who's Reading Your Writing: How Difficult is Your Text?"[45]

FRY Graph Readability Formula

The FRY readability assessment method was first introduced in 1968[46] and was further refined and extended in 1977[47] so that it could assess reading levels ranging from grades 1 through 17. Like the SMOG formula, this method is easy to use and can be completed manually in less than 15 minutes. The FRY looks at similar features of text materials (word syllables and sentence length), but grade levels are assessed by plotting values on a FRY Readability Graph rather than by using mathematic calculations or conversion tables.

The extended FRY graph for estimating readability is provided in Figure 12–4. Additional guidelines for use of the FRY assessment are shown in Box 12–7 and a Fry Graph Readability Calculator is available online.

SUITABILITY ASSESSMENT OF MATERIALS

The SAM was developed and validated in the early 1990's.[37] It is a comprehensive, systematic process and scoring instrument that can be used to evaluate several factors (and related criteria) that can affect whether print materials are appropriate, attractive, and readable for

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BOX 12–6   SMOG Value Calculation for Written Materials of 30 Sentences or Longer

- Select and count off 10 consecutive sentences at the beginning, middle, and end of your material (30 sentences total).
- In each of these three sections, circle all of the words that contain three or more syllables (polysyllabic words). Add up the number of words circled in each section. Repetitions of polysyllabic words should be counted as separate words.
- Estimate the square root of the total number of polysyllabic words counted in the entire sample. (Find the nearest perfect square and take its square root.)
- Add 3 to the square root. This number will be the SMOG reading level or the expected grade level the reader would need to have completed to understand the material.

GRAPH FOR ESTIMATING READABILITY—EXTENDED

by Edward Fry, Rutgers University Reading Center, New Brunswick, N.J. 08904

Average number of syllables per 100 words
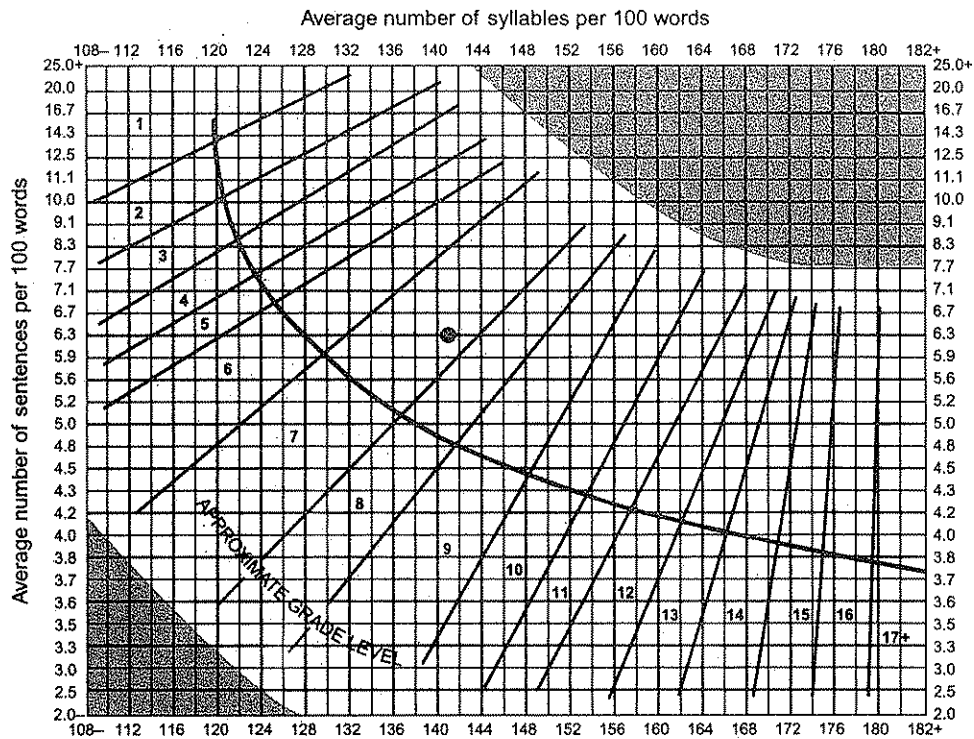
Expanded Directions for Working Readability Graph

1. Randomly select three (3) sample passages and count out exactly 100 words each, beginning with the beginning of a sentence. Do count proper nouns, initializations, and numerals.
2. Count the number of sentences in the hundred words, estimating length of the fraction of the last sentence to the nearest one-tenth.
3. Count the total number of syllables in the 100-word passage. If you don't have a hand counter available, an easy way is to simply put a mark above every syllable over one in each word, then when you get to the end of the passage, count the number of marks and add 100. Small calculators can also be used as counters by pushing numeral 1, then push the + sign for each word or syllable when counting.
4. Enter graph with *average* sentence length and *average* number of syllables; plot dot where the two lines intersect. Area where dot is plotted will give you the approximate grade level.
5. If a great deal of variability is found in syllable count or sentence count, putting more samples into the average is desirable.
6. A word is defined as a group of symbols with a space on either side; thus, *Joe, IRA, 1945,* and & are each one word.
7. A syllable is defined as a phonetic syllable. Generally, there are as many syllables as vowel sounds. For example, *stopped* is one syllable and *wanted* is two syllables. When counting syllables for numerals and initializations, count one syllable for each symbol. For example, *1945* is four syllables, *IRA* is three syllables, and & is one syllable.

Note: This "extended graph" does not outmode or render the earlier (1968) version inoperative or inaccurate; it is an extension. (REPRODUCTION PERMITTED—NO COPYRIGHT)

FIGURE 12-4 The extended FRY graph for estimating readability. (From Fry E. Fry's readability graph: clarifications, validity, and extension to level 17. J Read. 1977;21:242–252.

BOX 12-7   Instructions for Completing a FRY Assessment on Written Materials Greater than 300 Words

- Select three 100-word passages randomly from the material. Do not count proper nouns or numbers in the word count. If there are different content areas in the material, try to select a passage from those different areas.
- Count the number of sentences in each passage. If the last sentence is not complete, estimate the fraction of the last sentence to the nearest 10th.
- Calculate the average number of sentences in the passages: (s1 + s2 + s3) divided by 3.
- Count the total number of syllables in each 100-word passage. Add these values to get a total syllable count.
- Calculate the average number of syllables in the passages: (w1 + w2 + w3) divided by 3.

Use the FRY readability graph (see Figure 12-4) by locating the average number of syllables on the horizontal axis and the average number of sentences on the vertical axis. The intersection of these two points will fall in a section of the graph indicating a grade level.

TABLE 12-4   Factors Evaluated in the Suitability Assessment of Materials (SAM)

Factor	Selected Related Criteria
Content	Purpose is clear; scope is focused and limited; focus is on behaviors; summary is included.
Literacy demand	Readability; use of common words; use of active voice; context for material is provided
Graphics	Cover shows purpose; graphics are simple, appropriate, and relevant to content; captions provided
Layout and typography	Layout uses "white space"— not cluttered; typography is simple; subheadings used to "chunk" content
Learning stimulation and motivation	Material is interactive; behaviors are specific and are modeled; behaviors seem achievable to promote self-efficacy and motivation
Cultural appropriateness	Concepts and ideas presented are appropriate for the target cultural audience; language, images, and examples convey the cultural group in a positive way.

From Doak CC, Doak LG, Root JH. Teaching Patients with Low Literacy Skills, 2nd ed. Philadelphia: JB Lippincott, 1996.

target audiences (Table 12-4). Detailed instructions for completion of a SAM and a SAM scoring sheet can be found in Doak and colleagues' book[37] or online at the Harvard School of Public Health website.

Briefly, the SAM evaluates six primary factors that influence the suitability and potential effectiveness of written materials for various patient populations. Once the SAM instrument is completed according to the instructions and criteria, the evaluator will calculate a numerical percentage score for the material that will fall into one of the following categories: superior (70% to 100%), adequate (40% to 69%), or not suitable (0% to 39%). If the evaluator is also the developer of the educational material, a close analysis of subsection scores on the SAM can provide suggestions for revision of materials to increase suitability for target audiences and purposes.

SUMMARY

Given the enormity of the literacy problem in the United States and the likelihood that many patients receiving physical therapy services will have general literacy or health literacy concerns, the time is now to ensure that all students and clinicians are aware of and responsive to literacy issues they might encounter in clinical settings. There are many opportunities for teaching and learning about health literacy in both classroom and clinic settings. Once informed about populations at risk for limited literacy and behaviors that might indicate literacy problems, students and therapists can use their keen observational and listening skills to more quickly identify concerns and address them as they work with patients on a day-to-day basis. Integrate some of the literacy screening questions into your subjective evaluations for all patients. In addition to informal assessments of potential literacy problems, you might consider administering the NVS or REALM-SF in your clinics when deemed appropriate.

This chapter also provides several strategies and tools that can be used to create shame-free clinical environments and promote positive and supportive interactions with our patients with limited health literacy. Evaluate the signage in your clinical environments and your check-in procedures and forms. When you are working with your patients, use plain language to facilitate learning and use the teach-back technique to verify understanding of information you have provided in therapy sessions. Complete reviews of the educational materials you are currently providing to patients. Do they meet checklist suggestions or suitability criteria? Are they written at a 4th- to 8th-grade level so that they can be accessible and useful to a wide range of individuals? Findings from these assessments will help you to individualize your instructions and care to meet the needs of patients with limited health literacy, and they are also likely to improve the quality and effectiveness of the care you provide to all patients.

THRESHOLD CONCEPTS

Threshold Concept #1: Patient education and assessment of patient learning are essential components of all clinical interventions provided by physical therapists and serve as an important building block for attaining desired goals.

Threshold Concept #2: Without individualized communication and effective teaching in clinical settings, patient learning and desired therapy goals and health outcomes for clients may not be fully realized.

Threshold Concept #3: Limited general literacy and health literacy can be a significant barrier to patient learning and health behavior change and should be assessed to some degree, informally or formally, in all patient encounters.

ANNOTATED BIBLIOGRAPHY

Doak CC, Doak LG, Root JH. *Teaching Patients with Low Literacy Skills.* 2nd ed. Philadelphia: JB Lippincott; 1996.

   A classic and ground-breaking, frequently cited text that provides clear, concise, and practical suggestions for health professionals on ways to assess and address health literacy concerns in their everyday work with clients. The book includes several tools and guidelines for assessing the suitability and readability of health education materials and for

developing materials that are accessible and useful to individuals with low general and health literacy.

Falvo DR. *Effective Patient Education: A Guide to Increased Adherence.* 4th ed. Sudbury, MA: Jones and Bartlett; 2011.

A comprehensive overview of numerous aspects of patient education authored by a highly regarded health professional who is a registered nurse, licensed psychologist, rehabilitation counselor, and former Chair of the Society of Teachers of Family Medicine. The text offers an explicit patient-centered approach to patient education that urges the creation of practitioner-patient partnerships. In addition to all of the excellent chapters in this volume, there is a chapter specifically devoted to "Health Literacy in Patient Education and Patient Adherence" (Chapter 10).

Osborne H. *Health Literacy from A to Z: Practical Ways to Communicate Your Health Message.* 2nd ed. Burlington, MA: Jones and Bartlett; 2012.

As stated in the preface to the book, this edition of *Health Literacy from A to Z* is "written for someone who cares a lot about communicating health messages clearly and simply. It is also written for someone for whom health literacy is just one of many projects competing for your time and attention. In other words, this book is written for you." Indeed it is. A simple and straightforward, practical guide to health literacy and strategies you can use to assess and address health literacy in your clinical practice. Chapters are brief, stand-alone, and organized by topic from A to Z as the book title suggests.

Zarcadoolas C, Pleasant AF, Greer DS. *Advancing Health Literacy: A Framework for Understanding and Action.* San Francisco: Jossey-Bass; 2006.

Another frequently cited and accessible text that provides an overview of health literacy and then moves to specific descriptions and evaluation of health education programs designed to address health concerns that incorporated attention to health literacy as part of their design and implementation. The text concludes with 11 "Guidelines for Advancing Health Literacy" (Chapter 14) that span the areas from use of vocabulary to graphics to web design. The guidelines would be useful to any health professional interested in providing effective health education whether it is delivered primarily in face-to-face oral, written, visual, or media formats.

REFERENCES

1. Mostrom E, Shepard K. Teaching and learning about patient education. In: Shepard KF, Hensen GM, eds. *Handbook of Teaching for Physical Therapists.* Boston: Butterworth-Heinemann; 2002.
2. American Physical Therapy Association. *Guide to Physical Therapist Practice.* 2nd ed. Alexandria, VA: American Physical Therapy Association; 2003.
3. American Physical Therapy Association. *A Normative Model of Physical Therapist Professional Education: Version 2004.* Alexandria, VA: American Physical Therapy Association; 2004.
4. American Physical Therapy Association. *Evaluative Criteria for Accreditation of Education Programs for the Preparation of Physical Therapists.* Alexandria, VA: Commission on Accreditation in Physical Therapy Education; Updated May, 2011. Available at: http://www.capteonline.org/AccreditationHandbook/; Accessed 20.10.2011.
5. American Physical Therapy Association. *Minimum Required Skills of Physical Therapist Graduates at Entry-Level.* Alexandria, VA: American Physical Therapy Association; Updated December 14, 2009. Available at: http://www.apta.org/Educators/Curriculum/APTA/; Accessed 20.10.2011.
6. American Physical Therapy Association. *Physical Therapist Clinical Performance Instrument for Students.* Alexandria, VA: American Physical Therapy Association; 2006.
7. Joint Commission. *Comprehensive Accreditation Manual for Hospitals (CAMH): The Official Handbook.* Oakbrook Terrace, IL: The Joint Commission; 2011.
8. Joint Commission. *What Did the Doctor Say? Improving Health Literacy to Protect Patient Safety.* Oakbrook Terrace, IL: The Joint Commission; 2007.
9. Wilson-Stronks A, Lee KK, Cordero CL, et al. *One Size Does Not Fit All: Meeting the Health Needs of Diverse Populations.* Oakbrook Terrace, IL: The Joint Commission; 2008.
10. Joint Commission. *Advancing Effective Communication, Cultural Competence, and Patient- and Family-Centered Care: A Roadmap for Hospitals.* Oakbrook Terrace, IL: The Joint Commission; 2010.
11. Healthy People 2020. U.S. Department of Health and Human Services. *Office of Disease Prevention and Health Promotion.* Available at: http://www.healthypeople.gov/2020/; Accessed 19.10.2011.
12. National Center for Education Statistics. *Adult Literacy in America: National Adult Literacy Survey.* Washington, DC: U.S. Department of Education; 1993.
13. National Center for Education Statistics. *Adult Literacy in America: A First Look at the National Adult Literacy Survey.* 3rd ed. Washington, DC: U.S. Department of Education. Available at: https://nces.ed.gov/pubs93/93275.pdf.
14. National Center for Education Statistics. *2003 National Assessment of Adult Literacy (NAAL).* Available at: http://nces.ed.gov//naal/resources/execsumm.asp.
15. Institute of Medicine. *Health Literacy: A Prescription to End Confusion.* Washington, DC: National Academies Press; 2004.
16. U.S. Department of Health and Human Services. *Health People 2010: Understanding and Improving Health.* Washington, DC: U.S. Department of Health and Human Services; 2000.
17. National Center for Education Statistics. *The Health Literacy of America's Adults: Results from the 2003 National Assessment of Adult Literacy.* Washington, DC: U.S Department of Education, Institute for Education Sciences; 2006. Available at: http://nces.ed.gov/naal/health_results.asp.
18. Area Health Education Clear Health Communication Program, The Ohio State University. *Health Literacy: It's Time to Take it Seriously.* Columbus, OH: The Ohio State University, Office of Outreach and Engagement; 2006.
19. American Medical Association Foundation. *Assessing the Nation's Health Literacy: Key Concepts and Findings of the National Assessment of Adult Literacy (NAAL).* Available at: http://www.amafoundation.org/go/healthliteracy; 2008. Accessed 20.06.2009.
20. U.S. Department of Health and Human Services. *National Action Plan to Improve Health Literacy.* Available at: http://www.health.gov/communication/HLActionPlan; 2010. Accessed 18.01.2011.
21. Berckman ND, DeWalt DA, Pignone MP, et al. *Literacy and Health Outcomes.* Evidence Report/Technology Assessment Number 87: Available at: http://archive.ahrq.gov/clinic/eparch.htm; 2004; Accessed 19.10.2011.
22. DeWalt ND, Berkman ND, Sheridan S, et al. Literacy and health outcomes: a systematic review of the literature. *J Gen Intern Med.* 2004;19:1228–1239.
23. Area Health Education Clear Health Communication Program, The Ohio State University. *You Can't Tell By Looking: Assessing a Patient's Ability to Read and Understand Health Information.* Columbus, OH: The Ohio State University, Office of Outreach and Engagement; 2007.
24. Weiss BD. *Health Literacy: A Manual for Clinicians.* 2nd ed. Chicago: American Medical Association Foundation; 2007.
25. Marcus EN. The silent epidemic: the health effects of illiteracy. *N Engl J Med.* 2006;3555:339–341.
26. Parikh NS, Parker RM, Nurss JR, et al. Shame and health literacy: the unspoken connection. *Patient Educ Couns.* 1996;27:33–39.
27. Chew LD, Bradley KA, Boyko EJ. Brief questions to identify patients with inadequate health literacy. *Family Med.* 2004;36:588–594.
28. Wallace LS, Rogers ES, Roskos SE, et al. Brief report: screening items to identify patients with limited health literacy skills. *J Gen Intern Med.* 2006;21:874–877.
29. Area Health Education Clear Health Communication Program, The Ohio State University. *Creating a Shame-Free and Patient-Centered Environment for Those with Limited Literacy Skills.* Columbus, OH: The Ohio State University, Office of Outreach and Engagement; 2007.
30. Weiss BD, Mays MZ, Martz W, et al. Quick assessment of literacy in primary care: the Newest Vital Sign. *Ann Family Med.* 2005;3:514–522.
31. Davis TC, Long SW, Jackson RH, et al. Rapid estimate of adult literacy in medicine: a shortened screening instrument. *Family Med.* 1993;25:391–395.
32. Bass PF, Wilson JF, Griffith CH. A shortened instrument for literacy screening. *J Gen Intern Med.* 2003;18:1036–1038.
33. U.S. National Archives and Records Administration. *Plain Language Tools.* Available at: http://www.archives.gov/federal-register/write/plain-language/.
34. Plain Language Association International (PLAIN). Available at: http://www.plainlanguagenetwork.org; 2011.
35. *Pfizer Principles for Clear Health Communication.* 2nd ed. Available at: www.aspiruslibrary.org/literacy/PfizerPrinciples.pdf.
36. Health Literacy Innovations. *The Health Literacy and Plain Language Resource Guide.* 2008. Available at: www.HealthLiteracyInnovations.com
37. Doak CC, Doak LG, Root JH. *Teaching Patients with Low Literacy Skills.* 2nd ed. Philadelphia: JB Lippincott; 1996.

38. Wickland K, Ramos K. Plain language: effective communication in health care settings. *J Hospital Librarianship.* 2009;9:177–185.

39. Health Resources and Services Administration. *Plain Language Principles and Thesaurus for Making HIPAA Privacy Notices More Readable.* Available at: ftp://ftp.hrsa.gov/hrsa/hipaaplainlang.pdf.

40. National Patient Safety Foundation. *Ask Me 3.* Available at: http://www.npsf.org/askme3/.

41. Schillinger D, Piette J, Grumbach K, et al. Closing the loop: physician communication with diabetic patients who have low health literacy. *Arch Intern Med.* 2003;163:83–90.

42. Osborn H. *Health Literacy from A to Z: Practical Ways to Communicate Your Health Message.* 2nd ed. Burlington, MA: Jones and Bartlett Learning; 2011.

43. Kemp EC, Floyd MR, McCord-Duncan E, Lang F. Patients prefer the method of "Tell Back-Collaborative Inquiry" to assess understanding of medical information. *J Am Board of Fam Med.* 2008;21:24–30.

44. McLaughlin GH. SMOG grading: new readability formula. *J Read.* 1969;12:639–646.

45. Area Health Education Clear Health Communication Program, The Ohio State University. *Who's Reading Your Writing: How Difficult is Your Text?* Columbus, OH: The Ohio State University, Office of Outreach and Engagement; 2007.

46. Fry E. A readability formula that saves time. *J Read* 1968;11:513–516, 575–578.

47. Fry E. Fry's readability graph: clarifications, validity, and extension to level 17. *J Read.* 1977;21:242–252.

APPENDIX 12-A SELECTED HEALTH LITERACY TOOLS, REPORTS, AND ADDITIONAL RESOURCES

Selected Tools and Instruments for Assessing Health Literacy

Newest Vital Sign (NVS)
http://www.clearhealthcommunication.com/public-policy-researchers/NewestVitalSign.aspx

Rapid Estimate of Adult Literacy in Medicine (REALM) (long version)
Contact: Terry Davis, PhD
LSU Medical Center
1501 Kings Hwy
Box 598
Shreveport, LA 71130-3932

Rapid Estimate of Adult Literacy in Medicine—Revised (REALM-R)
http://www.ahrq.gov/pharmhealthlit/documents/realm-r.htm

Rapid Estimate of Adult Literacy in Medicine—Short Form (REALM-SF)
http://www.ahrq.gov/populations/sahlsatool.htm

Short Assessment of Health Literacy for Spanish Adults (SAHLSA-50)
http://www.ahrq.gov/populations/sahlsatool.htm

Test of Functional Health Literacy in Adults (TOFHLA) (long version)
Contact: Peppercorn Books and Press
PO Box 693
Snow Camp, NC 27349
http://www.peppercornbooks.com

Short Test of Functional Health Literacy in Adults (S-TOFHLA)
http://nmmra.org/resources/Physician/152_1485.pdf

Selected Health Literacy Guides, Reports and Resources:

Quick Guide to Health Literacy: Fact Sheets, Strategies, Resources
U.S. Department of Health and Human Services
Office of Disease Prevention and Health Promotion
http://www.health.gov/communication/literacy/quickguide/

Literacy and Health in America
Policy Information Report—Educational Testing Service

Policy Information Center
Mail Stop 19-R
ETS
Rosedale Road
Princeton, NJ 08541-0001
pic@ets.org
http://www.ets.org/research/policy_research_reports/pic-health

Health Literacy: A Prescription to End Confusion
Institute of Medicine of the National Academies Report
The National Academies Press
500 Fifth St. NW
Washington, DC 20001
http://www.nap.edu

Pfizer Principles for Clear Health Communication: A Handbook for Creating Patient Education Materials that Enhance Understanding and Promote Health Outcomes (2nd edition)
http://www.aspiruslibrary.org/literacy/PfizerPrinciples.pdf

Assessing the Nation's Health Literacy: Key Concepts and Findings of the National Assessment of Adult Literacy (NAAL)
American Medical Association Foundation
http://www.ama-assn.org/ama/pub/about-ama/ama-foundation/our-programs/public-health/health-literacy-program/assessing-nations-health.page

The Health Literacy of America's Adults: Results From the National Assessment of Adult Literacy (2006)
U.S. Department of Education
National Center for Education Statistics
http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2006483

Proceedings of the Surgeon General's Workshop on Improving Health Literacy National Institutes of Health (2006)
http://www.surgeongeneral.gov/topics/healthliteracy/toc.htm

"What Did the Doctor Say?": Improving Health Literacy to Protect Patient Safety
The Joint Commission (2007)
http://www.jointcommission.org/assets/1/18/improving_health_literacy.pdf

Just What Did the Doctor Order? Addressing Low Health Literacy in North Carolina
North Carolina Institute of Medicine (2007)

The Health Literacy and Plain Language Resource Guide
Health Literacy Innovations (2008)
http://www.HealthLiteracyInnovations.com

One Size Does Not Fit All: Meeting the Health Care Needs of Diverse Populations
The Joint Commission (2008)
www.jointcommission.org/assets/1/6/
HLCOneSizeFinal.pdf

National Standards for Culturally and Linguistically Appropriate Services in Health Care
U. S. Department of Health and Human Services
Office of Minority Health
http://www.minorityhealth.hhs.gov/assets/pdf/
checked/executive.pdf

Health Literacy Information Resources
U.S. National Library of Medicine
National Institutes of Health
http://www.nlm.nih.gov/services/queries/health_liter
acy.html

Improving Health Literacy Guide
University of Michigan Library
http://guides.lib.umich.edu/healthliteracy

Harvard School of Public Health—Health Literacy Website
http://www.hsph.harvard.edu/healthliteracy/

Ohio State University—AHEC Clear Health Communication Program
http://medicine.osu.edu/orgs/ahec/CHCP

Improving Readability in Health Care
U-Write.com
http://www.u-write.com/