

turning knowledge into practice

Measuring Health Literacy Using a Skills-Based Approach

Presented by:

Lauren McCormack, PhD, MSPH

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RTI International is a trade name of Research Triangle Institute

3040 Cornwallis Road
Phone 919-541-6277

■ P.O. Box 12194

■ Research Triangle Park, North Carolina, USA 27709
Fax 919-990-8454

■ e-mail Lmac@rti.org

www.rti.org

Research Team

RTI International

- Lauren McCormack, PhD, Nancy Berkman, PhD, Linda Squiers, PhD, Carla Bann, PhD, Claudia Squire, MS, and Tania Fitzgerald, BA

UCSF Center for Vulnerable Populations

- Dean Schillinger, MD, and Rahima Jan Gates, PhD

Project Consultants

- Judith Hibbard, DrPH, and Janet Ohene-Frempong, MS

External Advisory Panel

- Cynthia Baur, PhD (CDC)
- Cindy Brach, MPP (AHRQ)
- Darren DeWalt, MD, MPH (UNC-Chapel Hill)
- Elizabeth Hahn, MA (Northwestern University)
- Michael Paasche-Orlow, MD, MA, MPH (Boston University)
- Ellen Peters, PhD (University of Oregon)
- Dave Thissen, PhD (UNC-Chapel Hill)

Definition(s) of Health Literacy

- “The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make *appropriate* health decisions” (Ratzan and Parker (2000), in IOM (2004) and Healthy People 2010, DHHS (2005))
- At least 8 other definitions published since 1999 with the following concepts:
 - ability to perform basic reading and numerical tasks
 - ability to function in health care environment
 - attributes that predict one’s ability to gain access to, understand and use information in ways which promote health
 - link between knowledge and practice

Working Definition of Health Literacy

- “The degree to which individuals have the capacity to obtain, process, understand, and communicate about basic health information and services needed to make *informed* health decisions, using materials in the health and health care environment.”

Existing Instruments to Measure Health Literacy

- TOHFLA, REALM, WRAT, Ask-Me-3
 - Largely measure reading ability
 - Other limitations
- National Assessment of Adult Literacy (NAAL)
 - Some advantages
 - Not publicly available

Specific Aims of This Project

- 1) Develop health literacy items
- 2) Cognitively test items
- 3) Pilot test items
- 4) Conduct psychometric analyses of pilot data

Skills-based Approach to Health Literacy: Key Assumptions

- Measure people's ability to use different types of health information to make informed decisions
- Include skills needed across the life course (in periods of health and illness)
- Issues range from disease prevention to treatment and self-management
- U.S. health care system-based

Health Literacy Domains



- Print
 - Prose
 - Document
- Numeracy
- Oral – listening and speaking
- Computer/Web – including navigation

Hierarchical Process

- First....the skill/task
- Then....the stimuli
- Then...the mode of administration



Criteria for Selection of Skills ^{Im2}

- 1) Understanding health related concepts and terms (in writing and verbally)
- 2) Interpreting tables, charts, symbols, maps/other visuals
- 3) Making inferences based on available data
- 4) Applying information to new situations
- 5) Arithmetic manipulations
- 6) Reporting on engaging in communication, medical decision making and self-management/self-care

Slide 11

Im2

What else?

Imac, 12/11/2008

Criteria for Selection of Stimuli

- 1) Sufficiently related to the health of the public
- 2) Widely applicable, balanced content
- 3) Accessible to many subgroups (gender-neutral, culturally sensitive)
- 4) Clinically important and not controversial
- 5) Appropriate length of content
- 6) Mixture of public and private sector materials
- 7) Likely to stand the test of time
- 8) Variety of formats/channels
- 9) Wide range of difficulty
- 10) Has face validity

Criteria for Survey Items

- 1) No prior knowledge required
- 2) Has one correct response option and realistic distracters
- 3) Uses plain language techniques
- 4) Questions are independent of each other
- 5) Range of difficulty
- 6) Cognitive testing

Heart Disease Risk Calculator

Interactive Tool: Are You at Risk for a Heart Attack?

- This interactive tool measures your chance of having a heart attack in the next 10 years. The tool uses the values you enter to calculate your risk score.
- The calculation is based on information from the Framingham Heart Study. During the past 50 years, the Framingham Heart Study has studied the progression of heart disease and its risk factors.

Attribution: Interactive tool by Healthwise, Incorporated. This information was adapted from the U.S. National Cholesterol Education Program's "Risk Assessment Tool."

Heart Disease Risk Calculator: Question

- John is 39 years old and smokes. His blood pressure is 130/90 and he's on blood pressure medicine. His HDL cholesterol is 50 and his total cholesterol is 230. What is his estimated 10 year risk of a heart attack?
 - a) 20%
 - b) 12% (*correct response*)
 - c) 10%
 - d) 2%

Heart Disease Risk Calculator (continued) Im3

The values you enter include the most important risk factors for heart disease. They are as follows:

- **Age and gender.** The number of people affected by heart disease increases with age in men after age 45 and in women after age 55.
- **Smoker.** Select "yes" if you have smoked any cigarettes in the past month. Quitting smoking may be the most important step you can take to reduce your risk.
- **Systolic blood pressure.** Systolic blood pressure is the first number of your blood pressure reading. For example, if your reading is 120/80 (120 over 80), your systolic blood pressure is 120.
- **Blood pressure medicine.** There are several medicines used to treat high blood pressure.
- **HDL cholesterol.** HDL, or high-density lipoprotein, is the "good" cholesterol because it helps prevent cholesterol from building up in your arteries. The higher your HDL, the better.
- **Total cholesterol.** Total cholesterol is the sum of all the cholesterol in your blood. The higher your total cholesterol, the greater your risk for heart disease. A total cholesterol of 240 mg/dL and above puts you at twice the risk of heart disease compared with someone whose cholesterol is below 200 mg/dL. Less than 200 mg/dL gives you a lower risk for heart disease.

Slide 16

Im3

wordy but gives them a flavor for what's on there

lmac, 12/11/2008

Heart Disease Risk Calculator (continued)

INTERACTIVE HEALTH
> heart attack risk

Fill in your values and then click to calculate.

To use this calculator, you will need to know your systolic blood pressure, your HDL, and your total cholesterol values.

Gender: Male Female **Smoker?** Yes No **Age:** Select your age ▼

Click to continue

Select your age ▼
Select your age ▲
20-34
35-39
40-44
45-49
50-54
55-59
60-64
65-69
70-74
75-79 ▼

Attribution: Interactive tool by Healthwise, Incorporated. This information was adapted from the U.S. National Cholesterol Education Program's "Risk Assessment Tool."

Heart Disease Risk Calculator (continued)

INTERACTIVE HEALTH
> heart attack risk

Fill in your values and then click to calculate.

Systolic blood pressure: (upper number)

Are you taking blood pressure medication? Yes No

Select your value
Select your value
Less than 120 mmHg
120-129 mmHg
130-139 mmHg
140-159 mmHg
160 mmHg or higher

Attribution: Interactive tool by Healthwise, Incorporated. This information was adapted from the U.S. National Cholesterol Education Program's "Risk Assessment Tool."

Heart Disease Risk Calculator (continued)

INTERACTIVE HEALTH
> heart attack risk

Fill in your values and then click to calculate.

HDL cholesterol:

Total cholesterol mg/dL (mmol/L):

Select your value
Select your value
60 mg/dL (1.54 mmol/L) or higher
50-59 mg/dL (1.28-1.53 mmol/L)
40-49 mg/dL (1.03-1.27 mmol/L)
39 mg/dL (1.02 mmol/L) or lower

Select your value
Select your value
Less than 160 mg/dL (< 4.14 mmol/L)
160-199 mg/dL (4.15-5.17 mmol/L)
200-239 mg/dL (5.18-6.21 mmol/L)
240-279 mg/dL (6.22-7.24 mmol/L)
280 mg/dL (7.25 mmol/L) or higher

Attribution: Interactive tool by Healthwise, Incorporated. This information was adapted from the U.S. National Cholesterol Education Program's "Risk Assessment Tool."

Heart Disease Risk Calculator (continued)

INTERACTIVE HEALTH
› heart attack risk

Your estimated 10-year risk of heart attack

12%

That means 12 people in 100 with these risk factors will have a heart attack in the next 10 years.

Male	Smoker? Yes	Age: 35-39	Systolic BP: 130-139
BP med? Yes	HDL cholesterol: 50-59 mg/dL (1.28- 1.53 mmol/L)		Total cholesterol: 200-239 mg/dL (5.18-6.21 mmol/L)

[Click to recalculate](#)



Attribution: Interactive tool by Healthwise, Incorporated. This information was adapted from the U.S. National Cholesterol Education Program's "Risk Assessment Tool."

Five Steps to Safer Health Care

Five Steps to Safer Health Care

- 

1 Ask questions if you have doubts or concerns.
Ask questions and make sure you understand the answers. Choose a doctor you feel comfortable talking to. Take a relative or friend with you to help you ask questions and understand the answers.
- 

2 Keep and bring a list of ALL the medicines you take.
Give your doctor and pharmacist a list of all the medicines that you take, including non-prescription medicines. Tell them about any drug allergies you have. Ask about side effects and what to avoid while taking the medicine. Read the label when you get your medicine, including all warnings. Make sure your medicine is what the doctor ordered and know how to use it. Ask the pharmacist about your medicine if it looks different than you expected.
- 

3 Get the results of any test or procedure.
Ask when and how you will get the results of tests or procedures. Don't assume the results are fine if you do not get them when expected, be it in person, by phone, or by mail. Call your doctor and ask for your results. Ask what the results mean for your care.
- 

4 Talk to your doctor about which hospital is best for your health needs.
Ask your doctor about which hospital has the best care and results for your condition if you have more than one hospital to choose from. Be sure you understand the instructions you get about follow-up care when you leave the hospital.
- 

5 Make sure you understand what will happen if you need surgery.
Make sure you, your doctor, and your surgeon all agree on exactly what will be done during the operation. Ask your doctor, "Who will manage my care when I am in the hospital?" Ask your surgeon: Exactly what will you be doing? About how long will it take? What will happen after the surgery? How can I expect to feel during recovery? Tell the surgeon, anesthesiologist, and nurses about any allergies, bad reaction to anesthesia, and any medications you are taking.

 U.S. Department of Health and Human Services in partnership with  American Hospital Association  American Medical Association
PH 104 54802 14 0023

Attribution: Flyer sponsored by the Agency for Healthcare Research & Quality (AHRQ), DHHS.

Five Steps to Safer Health Care: Questions

- **EASY:** What could you do if you did not feel comfortable talking to your doctor?
 - a) Change to a new doctor
 - b) Write down your questions and bring them with you to the visit
 - c) Bring a friend with you to your appointment
 - d) Any of the above (*correct response*)

- **MEDIUM:** John picked up his usual medication from the drug store. The pills were half their usual size. What should he do?
 - a) Take two pills instead of one
 - b) Cut the pills in half
 - c) Take a pill every other day instead of every day
 - d) Ask the pharmacist what to do (*correct response*)

Maintaining a Healthy Weight

Maintaining weight	<p>Energy In = Energy Out</p> 	Your weight will stay the same when the calories you eat and drink equal the calories you burn.
Losing weight	<p>Energy In < Energy Out</p> 	You will lose weight when the calories you eat and drink are less than the calories you burn.
Gaining weight	<p>Energy In > Energy Out</p> 	You will gain weight when the calories you eat and drink are greater than the calories you burn.

Attribution: Image sponsored by MyPyramid.gov, United States Department of Agriculture (USDA).

Maintaining a Healthy Weight: Question

- What is one way to maintain your weight?
 - a) Make sure the amount of energy you take in is greater than your energy you spend
 - b) Make sure the amount of energy you take in equals the energy you spend (*correct response*)
 - c) Make sure the amount of energy you take in is less than the energy you spend

Signs of a Stroke

Signs of a Stroke

 American Heart Association



My father is alive today because I know the signs of a stroke. You can save lives, too, if you learn these signs.

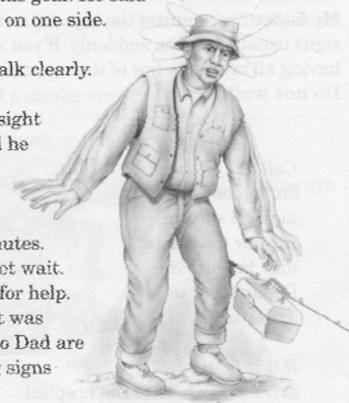
Let me tell you what happened. My father has high blood pressure. Last week we went fishing.

He dropped his gear. He said he felt weak on one side.

He did not talk clearly.

He said his sight blurred, and he felt dizzy.

He felt okay in a few minutes. Still, I did not wait. I called 911 for help. I knew what was happening to Dad are the warning signs of a stroke.



©1992, American Heart Association

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I learned the signs of a stroke and saved my father's life. You can save lives, too. Remember, some people have all of these signs, but some people have only a few of them. If you or someone else have even a few of these signs, **get help fast!**

The signs of a stroke are:

- feeling weak or numb on *one* side
- blurry vision, or no vision, usually in *one* eye
- unable to talk clearly
- dizziness or falling
- severe headache

3

Attribution: Flyer sponsored by the American Heart Association.

Signs of a Stroke: Questions

- **EASY:** Which of the following is NOT a sign of a stroke?
 - a) Difficulty breathing (*correct response*)
 - b) Blurred vision
 - c) Bad headache
 - d) Numbness on one side.

- **MEDIUM:** Which of the following is a true statement?
 - a) Someone who is having a stroke will have all of the signs
 - b) Someone who is having a stroke may have only two or three signs (*correct response*)
 - c) Everyone who has a stroke dies if they are not treated right away

The California Fires

“THE CALIFORNIA FIRES: HEALTH PROBLEMS; Effects of Wildfire Smoke Vary, Experts Say

By DAVID TULLER

The inhalation of tiny smoke particles from wildfires, while unpleasant, is unlikely to cause long-term damage to healthy people unless it occurs over a prolonged period, doctors and environmental health specialists said.

But the experts also warned that young children, the elderly and anyone with chronic pulmonary or cardiovascular conditions could be at risk for complications, and those people were particularly advised to stay indoors and run their air-conditioners while the fires in Southern California continued to rage.

The primary danger, experts say, arises from particles from vegetation and other burned matter that can lodge deep in the lungs and, in some cases, lead to severe shortness of breath, asthma attacks, bronchitis and other pulmonary ailments.

The most damaging particles are invisible to the eye and can evade the body's normal protective mechanisms, like tiny hairs in the nostrils and cells within the lungs designed to expel or destroy alien substances.

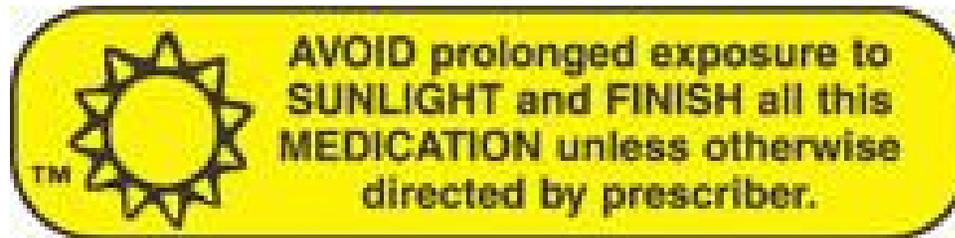
"If you can see the particles, they're not going to hurt you, unless they land in your eye," said Dr. William Hughson, a professor of medicine at the University of California at San Diego and director of its Center for Occupational and Environmental Medicine. The particles to be concerned about, Dr. Hughson said, are smaller than three microns in size, or three-thousandths of a millimeter.

Attribution: Excerpt of article printed in the New York Times newspaper, Oct 20, 2003.

The California Fires: Question

- Are bigger or smaller burned matter more dangerous to people's lungs?
 - a) The bigger it is the more damage it can do
 - b) It depends on the type of particle
 - c) You mostly need to be concerned about the small particles (*correct response*)

Caution Symbols on Medication Bottles



- If a person is at the beach and they are taking this medicine, they should
 - a) Continue all-day outdoor activities without any changes
 - b) Stop all outdoor activities unless they wear sunscreen
 - c) Stop taking this medicine if they are going to be outdoors
 - d) Sit in the shade if you are going to be outdoors (*correct response*)

Faces of Influenza



This 1 minute PSA ad shows and describes “at risk” groups that should be immunized every year (based on health condition, age and exposure to those at risk).

Attribution: Video sponsored by the American Lung Association, and posted on YouTube.com.

Faces of Influenza: Questions

- **EASY:** Which of these groups of people should get a flu shot?
 - a) Everyone
 - b) Anyone 50 years of age and older (*correct response*)
 - c) Anyone under 50 years of age
 - d) College students

- **MEDIUM:** How often should people get flu a shot?
 - a) When you are born
 - b) When you are 4 years old
 - c) Every year (*correct response*)
 - d) When you get a cold

Addressing Reliability and Validity

- Reliability
 - Internal consistency
 - Test-retest reliability
- Content validity
 - Expert panel review
 - Content coverage
- Construct validity
 - Factor analyses
 - Group comparisons
- Criterion validity
 - Relationship with other health literacy measures

Lessons Learned and Next Steps

- Dilemma about literacy versus health literacy
 - Need to separate the two?
- Finding good “real-world” stimuli is difficult
- Achieving the right range of difficulty is an art not a science



Contact Information

Lauren McCormack, PhD, MSPH, RTI International

- PHONE: 919-541-6277
- EMAIL: Lmac@rti.org