

Improving Care for Patients with Diabetes and Poor Health Literacy/Numeracy

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Learning Objectives:

1. Define literacy, health literacy, and numeracy
2. Discuss relevance of health literacy to patient care
3. Describe how to identify low-literacy patients
4. Strategies to improve communication
5. Diabetes Specific Tools

1. Definitions:

- Literacy – “An individual’s ability to read, write, and speak in English, and compute and solve problems at levels of proficiency necessary to function on the job and in society, to achieve one’s goals, and develop one’s knowledge and potential.” – National Literacy Act, 1991
 - According to National Adult Literacy Survey (NALS, 1992) and National Assessment of Adult Literacy (NAAL, 2003), over 90 million adult Americans lack adequate functional literacy skills
- 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.” – Healthy People 2010
 - Context specific; people with adequate general literacy can still have low health literacy
 - Prevalence of low or marginal health literacy approximately 45% across medical studies
- Numeracy – “The ability to understand and use numbers and math skills in daily life.”

2. Relevance of health literacy to patient care:

- Patients with low or marginal health literacy struggle to understand medical terminology, self-care instructions, informed consent documents, etc.
- Literacy is a strong independent predictor of knowledge, skills, and some outcomes, after controlling for socioeconomic status, age, cognitive function, etc.
- Outcomes associated with literacy: general health status, hospitalization, emergency department use, prostate cancer stage, depression, diabetes control, HIV control, mammography, Pap smear, pneumococcal immunization, influenza immunization, STD screening, substance use, birth control knowledge, cervical cancer screening, breastfeeding, asthma knowledge, hypertension knowledge, medication adherence, smoking, cost.
- Patient literacy and numeracy skills are highly correlated with their ability to read and interpret food labels and calculate carbohydrate consumption. Common errors in interpreting food labels include: misapplication of serving size, confusion over extraneous information, calculation errors.

3. Assessing literacy skills:

- Clinical red flags: Seek help only when illness is advanced, Have difficulty explaining medical concerns, May pretend they can read, Excuses: “I forgot my glasses.”, Lots of papers folded up in purse/pocket, Lack of follow-through with tests/appts., Seldom or never have any questions, Can’t describe how to take meds
- Asking about literacy:
 - Can incorporate into social history
 - Lead in with “What kind of work do/did you do? Where did you go to school? How far did you go in school? How happy are you with the way you read?”
- Testing literacy skills
 - Medication review – ask patient to name and explain purpose of 1-2 meds
 - Reading task – ask patient to look at something and tell you what it says
 - Writing task – ask patient to write something relevant to medical condition
 - Formal assessment (research only) – Test of Functional Health Literacy in Adults (TOFHLA), Rapid Estimate of Adult Literacy in Medicine (REALM)
 - Screening Tools – Shortened REALM, Newest Vital Sign (NVS)

4. Strategies recommended to improve communication:

- Explain things clearly in plain language
 - Avoid medical jargon and vague terms
- Focus on key messages and repeat
 - Stick to 1-3 key points each visit, focus on patient concerns, repeat key information
- Use a “teach back” or “show me” technique to check understanding
 - Ask patient to repeat back important information or demonstrate new skills
 - One of top 11 patient safety practices by AHRQ
 - Associated with better glycemic control (Schillinger, Arch Intern Med 2003)
- Use patient-friendly educational materials to enhance interaction
 - Simple wording, short sentences, 4th-6th grade reading level, picture-based
 - Assess readability of materials using Flesch-Kincaid, SMOG, or other methods. Simple tools include: Microsoft Word Grammer Check, or <http://www.readability.info/>)

5. Diabetes Specific Resources to Address Health Literacy and Numeracy

- Scales (See <http://www.mc.vanderbilt.edu/diabetes/drtc/preventionandcontrol/>)
 - Spoken Knowledge in Low Literacy in Diabetes (SKILL-D)
10 item measure of diabetes knowledge
 - Diabetes Numeracy Test (DNT)
43 item measure of diabetes related numeracy skills
 - Diabetes Numeracy Test 15 (DNT-15)
15 item measure of diabetes related numeracy skills
 - Diabetes Adolescent and Parental Numeracy Tests
39 item versions for parents of young children and adolescents with diabetes
 - Diabetes Numeracy Test Latino (DNT-Latino)
Spanish version of the Diabetes Numeracy Test (in process)
- Educational Materials
 - Diabetes Everyday Guide (ACP). See <http://foundation.acponline.org/hl/diabguide.htm>
 - NIDDK Materials. See <http://www.niddk.nih.gov/health/eztoread.htm#dia>
 - Diabetes Literacy and Numeracy Education Toolkit (DLNET):
See <http://www.mc.vanderbilt.edu/diabetes/drtc/preventionandcontrol/>

References:

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2. Schillinger D, Grumbach K, Piette J et al. Association of health literacy with diabetes outcomes. *Jama*. 2002;288:475-82.
3. Cavanaugh, K., Huizinga, M. M., Wallston, K. A., Gebretsadik, T., Shintani, A., Davis, D., Gregory, R, Fuchs, L. S., Malone, R., Cherrington, A, Pignone, M. P., Dewalt, D. A., Elasy, T. A., and Rothman, R. L. Association of Numeracy and Diabetes Control. *Annals of Internal Medicine* 148[10]. 5-20-2008.
4. Rothman RL, Dewalt DA, Malone R et al. Influence of patient literacy on the effectiveness of a primary care-based diabetes disease management program. *Jama*. 2004;292:1711-1716.
5. 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.

WEBSITE RESOURCES

ORGANIZATIONS THAT SUPPORT HEALTH LITERACY AND ADULT LITERACY

American College of Physicians Foundation	http://foundation.acponline.org/healthcom.htm
American Medical Association Foundation`	http://www.ama-assn.org/ama/pub/category/8115.html
Center for Plain Language	http://www.centerforplainlanguage.org
Clear Language Group	http://www.clearlanguagegroup.com/
Harvard Health Literacy Studies	http://www.hsph.harvard.edu/healthliteracy/
Health Literacy Institute	http://www.healthliteracyinstitute.net/
Health Literacy Month	http://www.healthliteracymonth.com/
National Center for Education Statistics (NAAL)	http://nces.ed.gov/naal/
National Institute for Literacy	http://www.nifl.gov
Partnership for Clear Health Communication	http://www.askme3.org/
Pfizer Clear Health Communication Initiative	http://www.pfizerhealthliteracy.com/
Plain Language Action & Information Network	http://www.plainlanguage.gov
Plain Language Association International	http://www.plainlanguagenetwork.org

WEBSITE RESOURCES FOR TEACHERS AND BIBLIOGRAPHY SOURCES

Agency for Healthcare Research and Quality (AHRQ)	http://www.ahrq.gov/clinic/epcsums/litsum.htm
Centers for Disease Control and Prevention	http://www.cdc.gov/communication/resources/simpput.pdf
Literacy Information and Communication System	http://www.nifl.gov/lincs/
LINCS Health & Literacy Special Collection	http://www.worlded.org/us/health/lincs/
LINCS Hot Sites	http://www.nifl.gov/lincs/hotsites/hotsites.html
Health and Literacy Compendium	http://www.worlded.org/us/health/docs/comp/index.html
Health literacy: a prescription to end confusion (Institute of Medicine)	
	http://www.nap.edu/catalog/10883.html or http://www.iom.edu/report.asp?id=19723
National Cancer Institute, <i>Clear and Simple</i>	http://www.cancer.gov/cancerinformation/clearandsimple .
National Library of Medicine Current Bibliographies	http://www.nlm.nih.gov/pubs/cbm/hliteracy.html

WEBSITES THAT PROVIDE LOW LITERACY MATERIALS FOR PATIENTS

American Academy of Family Physicians	http://familydoctor.org/
FDA Easy-To-Read publications	http://www.fda.gov/opacom/lowlit/7lowlit.html http://www.fda.gov/oc/seniors/ http://www.fda.gov/opacom/lowlit/englow.html
Kidshealth (can help adults as well)	http://www.kidshealth.org/
LSU Health Sciences Center Patient Education Library	http://lib-sh.lsuhs.edu/fammed/pted/pted.html
National Center for Farmworker Health, Inc.	http://www.ncfh.org/00_ns_rc_pateduc.php
National Library of Medicine Medline Plus	http://www.nlm.nih.gov/medlineplus/healthtopics.html
NIDDK (branch of Nat'l Inst. Health)	http://www.niddk.nih.gov/health/eztoread.htm#dia