Mitigating the **Effects** *of* **Low Health Literacy**

A Brief of the Research Evidence for Health Communicators & Educators

Health Literacy is "the degree to which individuals can obtain, process, and understand the basic health information and services they need to make appropriate health decisions."

Ratzan & Parker, 2000

THE GOAL: IMPROVING HEALTH OUTCOMES FOR LOW LITERACY AUDIENCES

Low health literacy is a significant problem in the United States. In 2003, approximately 80 million adults in the U.S. (36 percent) had limited health literacy. Rates in certain population subgroups were higher, including the elderly, minorities, individuals who have not completed high school, adults who spoke a language other than English before starting school, and people living in poverty.

The negative influence of low or limited health literacy on the use of health services and on overall health outcomes is significant, especially for seniors.

In 2010, the United States Department of Health and Human Services created a **National Action Plan to Improve Health Literacy.** Among its goals, the plan calls for further research into interventions that mitigate the effects of low health literacy. The plan also encourages of evidence-based interventions among clinicians, health communicators, and health educators that can improve the health of this important audience.

Research suggests that some strategies can improve comprehension and choicemaking. Evidence also suggests that employing multiple strategies can improve health outcomes for consumer and patient audiences with limited health literacy.

By incorporating both evidence-based individual strategies and the broader features of multiple strategy interventions, health communicators and educators can help mitigate the effects of low health literacy.

ABOUT THE RESEARCH

An independent research team conducted an update of a 2004 systematic review of the evidence concerning health literacy outcomes and interventions.The review was conducted through support from the Agency for Healthcare Research and Quality (AHRQ). The update reviewed 132 individual studies. The conclusions of that update are the basis of this guide. An online version of this brief provides direct links to the full report as well as the original studies. It is available at www.effectivehealthcare.ahrq.gov/literacybrief.cfm.

UNDERSTANDING THE NEED

The Effect of Low Health Literacy on Use of Services and Health Outcomes

- Lower health literacy was associated with increased emergency department and hospital use, less screening for breast cancer (mammography), and lower influenza immunization. ●●○
- There is a relationship between lower health literacy and a poorer ability to:
  - take medications properly.
  - interpret labels and health messages. ●●○
- There is a relationship between lower health literacy and poorer overall health status for seniors. ●●○
- The risk of mortality for seniors was clearly higher with lower health literacy. ●●●
- Health literacy mediates or partially explains disparities in health outcomes between white and black participants for a variety of outcomes. ●○○

STRENGTH OF EVIDENCE RATINGS

- ●●● There are consistent results from good-quality studies. Further research is very unlikely to change the conclusions.
- ●●○ Findings are supported, but further research could change the conclusions.
- ●○○ There are very few studies, or existing studies are flawed.

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EVIDENCE ABOUT INTERVENTIONS FOR LOW LITERACY AUDIENCES

Improving Comprehension and Choicemaking

While the overall rating of the evidence was low, the following single intervention strategies suggested promise for improving comprehension and/or quality of choice for low-health-literacy populations in one or more studies. Direct links to the original studies and interventions are available online.

Individual Strategy	Example
Presenting essential information only.	Presenting information on hospital death rates without other distracting information, such as information on consumer satisfaction.
Presenting essential information first.	Presenting information on hospital death rates before information about consumer satisfaction.
Alternative numerical presentation.	• Presenting information so that the higher number (rather than the lower number) indicates better quality. • Using the same denominators to present baseline risk and treatment benefit information.
Adding icon arrays to numerical presentations of treatment benefit.	Use of pictographs to display benefit or risk ratios, and grouping icons by their representation rather than scattered throughout pictograph.
Using a reduced reading level.	Writing materials at a 7th or 8th grade level or lower, using simple language and a larger font size.
Using video.	Using video as an adjunct to verbal narrative to increase the understanding of care options.
Using illustrated narratives.	Using personal or third-person stories with corresponding illustrations.

IMPROVING USE OF SERVICES AND HEALTH OUTCOMES

A moderate level of evidence exists to support a variety of communication/education interventions employing multiple strategies as being associated with improved health outcome or health services utilization. Direct links to the original studies and interventions are available online.

The Intervention	Example	Outcome *(All Moderate Level of Confidence)*
Intensive self-management and adherence interventions.	Patients with heart failure received education on self-care emphasizing daily weight measurement, diuretic dose self-adjustment, and symptom recognition and response. Pharmacists provided a 9-month multilevel intervention to low-income patients on multiple medications for heart failure.	Reduced emergency room visits, hospitalizations, and mortality.
Educational interventions and/or cues for screening.	Health care providers were trained in how to communicate to low literacy patients and were given feedback on their rates of recommending specific screening tests. Patients received a video, brochure, and simplified instructions for the at-home test (if recommended).	Increased screening rates.
Intensive disease management programs.	Individual meetings with a diabetes educator were followed by telephone or in-person contact every 2 - 4 weeks.	Reduced disease severity, improved measures of disease.
The evidence is insufficient to draw conclusions about the impact of multiple strategy interventions on knowledge, self-efficacy, adherence, health-related skills, quality of life, or cost. Results across studies were mixed. With these multi-faceted interventions it is not possible to identify the effectiveness of any single component on the overall outcome.		

GENERAL OBSERVATIONS FROM RESEARCH

1. Several common features of successful interventions may be important in developing interventions that mitigate the effects of low health literacy, such as improving self-management and reducing rates of hospitalizations and mortality. These include:
   - Basing the program or intervention on theory.
   - Designing programs of high intensity.
   - Emphasizing skill-building within the program or intervention.
   - Using health professionals to deliver the information.
   - Pilot testing before implementation of the program or intervention.
2. Effective interventions that mitigate the effects of low health literacy may work by focusing on three intermediate outcomes:
   - Increasing knowledge.
   - Increasing self-efficacy.
   - Changing behavior.

CONCLUSION

Lower health literacy can be associated with suboptimal use of health services and poorer outcomes. There is moderate evidence to suggest that supporting the use of intensive self-management and disease management programs can improve the health status of populations with low or limited health literacy. Developers of materials for audiences with low health literacy may wish to employ strategies that show promise for improving comprehension and quality of choice.

SOURCE

Berkman ND, Sheridan SL, Donahue KE, Halpern DJ, Viera A, Crotty K, Holland A, Brasure M, Lohr KN, Harden E, Tant E, Wallace I, Viswanathan M. Health Literacy Interventions and Outcomes: An Updated Systematic Review. Evidence Report/Technology Assesment No. 199. (Prepared by RTI International–University of North Carolina Evidence-based Practice Center under contract No. 290-2007-10056-I. AHRQ Publication Number 11-E006. Rockville, MD. Agency for Healthcare Research and Quality. March 2011. The summary was prepared by the John M. Eisenberg Center for Clinical Decisions and Communications Science at Baylor College of Medicine in Houston, TX.

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