
The Role of Health Literacy in Health Outcomes and Health Disparities

Michael Paasche-Orlow, MD MA MPH

Associate Professor of Medicine

Boston University School of Medicine

**PEPH Webinar:
Environmental Health Literacy**

Literacy

- Literacy is inherently a functional concept i.e., it is competence in a set of skills relating to a specific domain of human endeavors.
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Issues About the Concept of Literacy

- ❑ Basic literacy skills (reading, writing, arithmetic) very useful
 - ❑ However, really is no one Literacy
 - ❑ The demands are contextual
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Definition 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.”

Healthy People 2010

Definition of Health Literacy

“The degree to which individuals have the capacity to obtain, process, and understand ~~basic~~ health information, services, and skills needed to make informed health decisions and actions.

- Understand how to use glucometer
 - Interpret blood glucose results
 - Obtain information about an illness
 - Participate in discussions of informed consent
 - Enroll in health insurance plan
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Conceptual Domains for HL

- Basic Literacy Skills
 - Prose, Document, Quantitative
- Self-care tasks
 - Disease specific
- Interactional
- Navigation

❖ → place your bets

Health Literacy in America

National Assessment of Adult Literacy (NAAL)

- National household survey, 2003, N~20,000
- Prose, document, and quantitative literacy



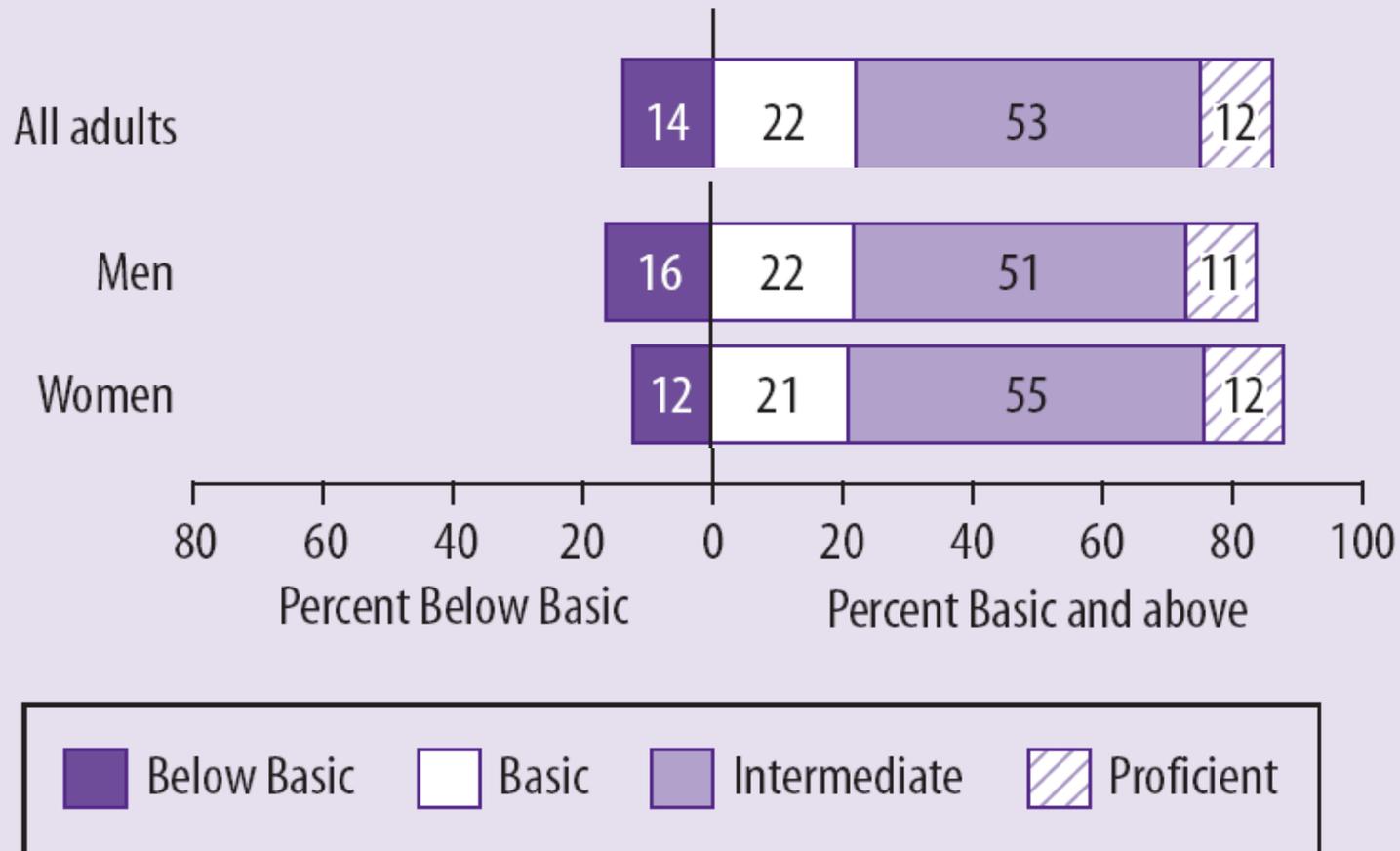
- English

NAAL Levels

- ❑ Below Basic: Circle date on appointment slip, Understand simple pamphlet about pre-test instructions
- ❑ Basic: Understand simple patient handout
- ❑ Intermediate: Determine healthy weight from BMI chart, Interpret prescription and over-the-counter drug labels
- ❑ Proficient: Define medical term from complex document, Calculate share of employee's health insurance costs



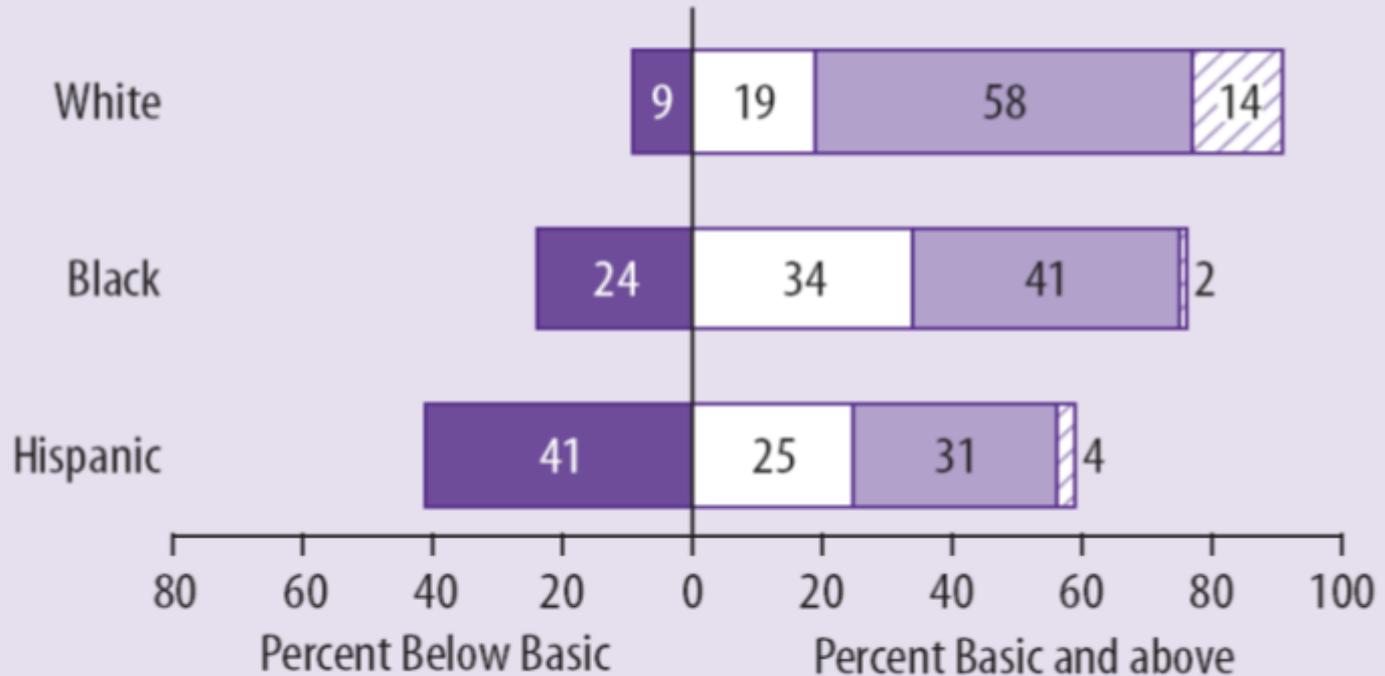
Figure 2-1. Percentage of adults in each health literacy level: 2003





Percentage of adults in each health literacy level, by race/ethnicity: 2003

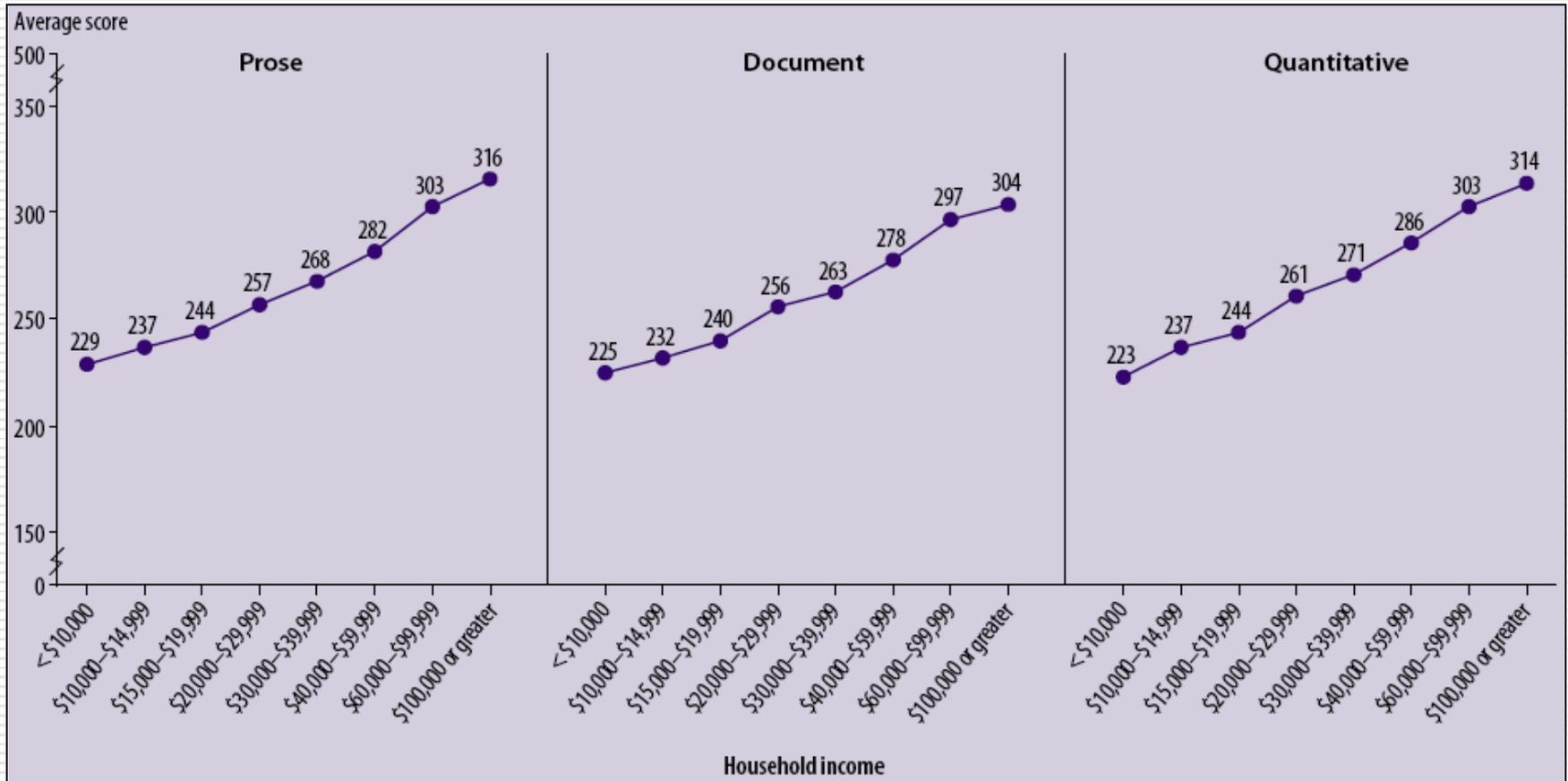
Race/ethnicity



Below Basic Basic Intermediate Proficient

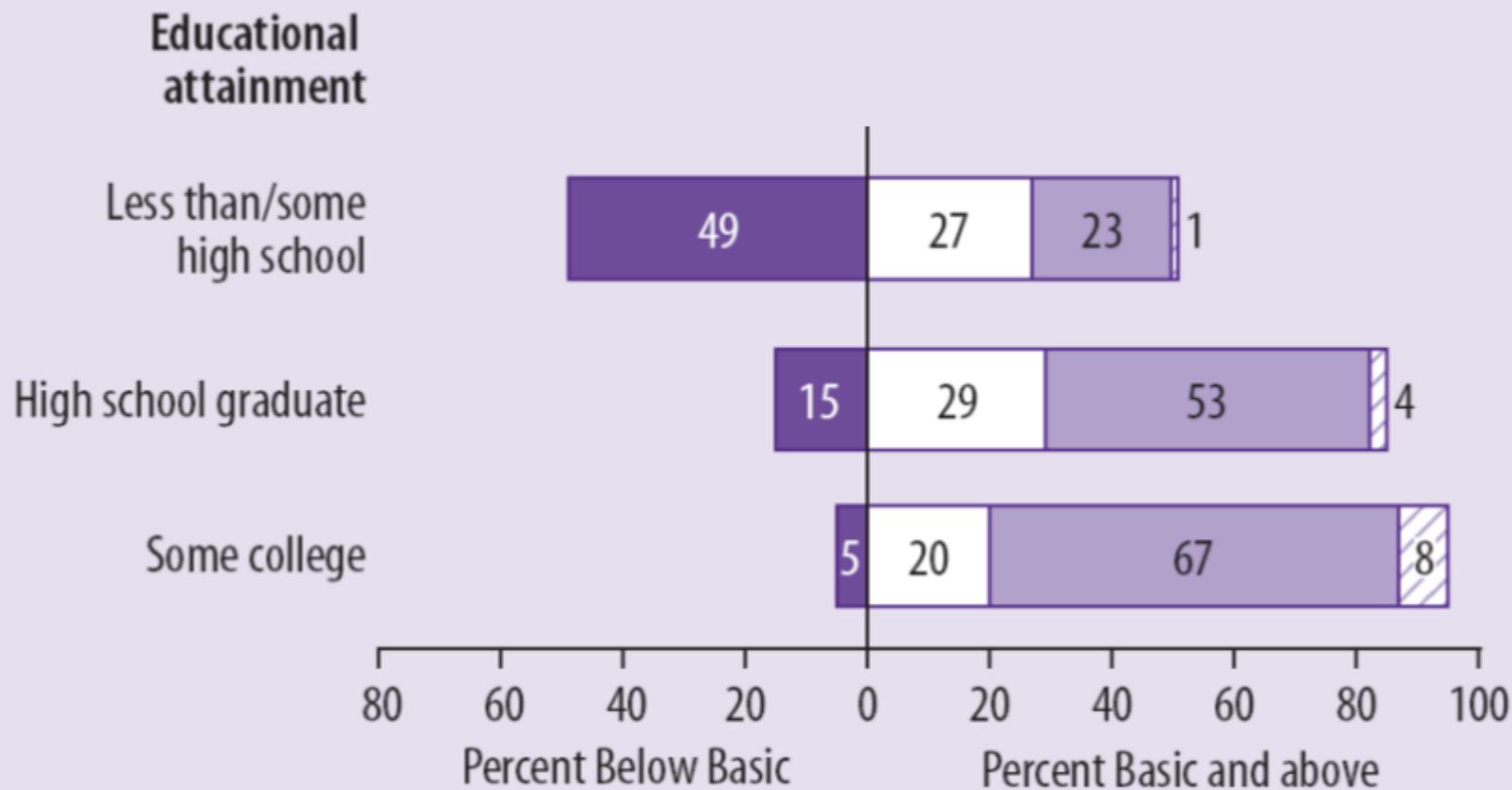
National Assessment of Adult Literacy (NAAL), 2003

Literacy and Income



National Assessment of Adult Literacy (NAAL), 2003

Percentage of adults in each health literacy level, by highest educational attainment: 2003



National Assessment of Adult Literacy (NAAL), 2003

Why does this matter?



Literacy and Health Outcomes

Health Outcomes/Services

- General health status
- Hospitalization
- Emergency department use
- Prostate cancer stage
- Depression
- Diabetes control*
- HIV control*
- Mammography*
- Pap smear
- Pneumococcal immunization
- Influenza immunization
- STD screening
- Cost
- Mortality

Behaviors

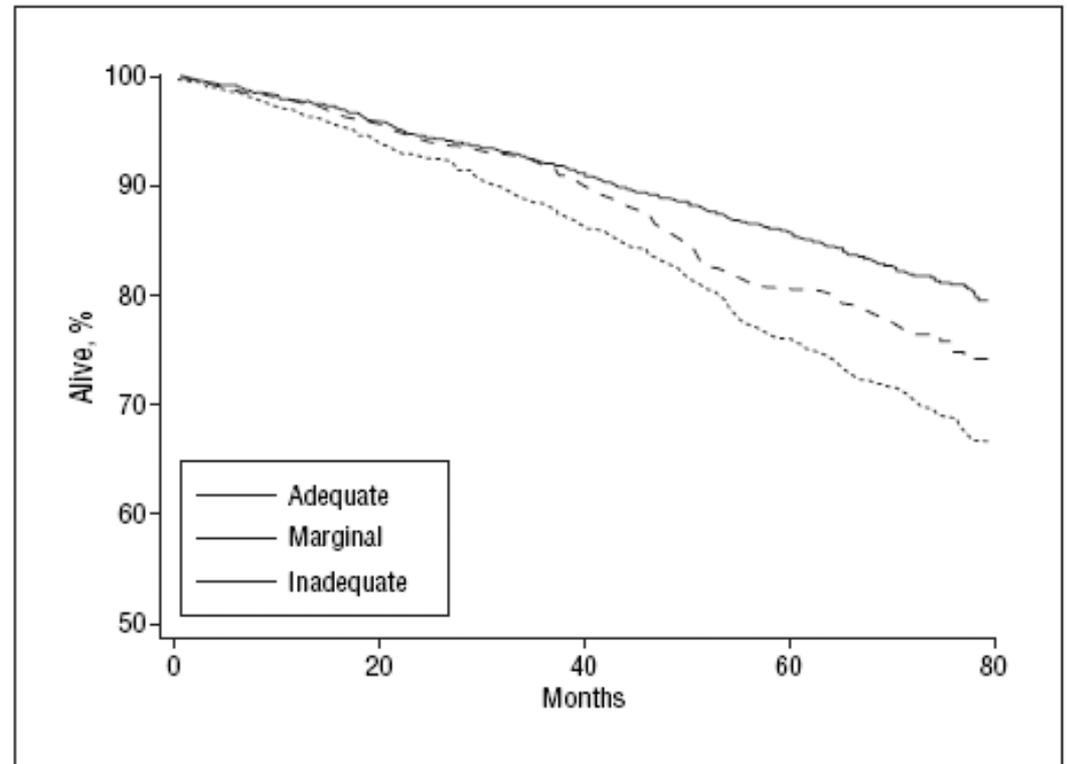
- Substance abuse*
- Breastfeeding
- Behavioral problems
- Adherence to medication*
- Smoking*

Knowledge

- Birth control
- Pap screening
- Emergency department instructions
- Asthma
- Hypertension
- Diabetes
- And many more...

Low Literacy and Mortality

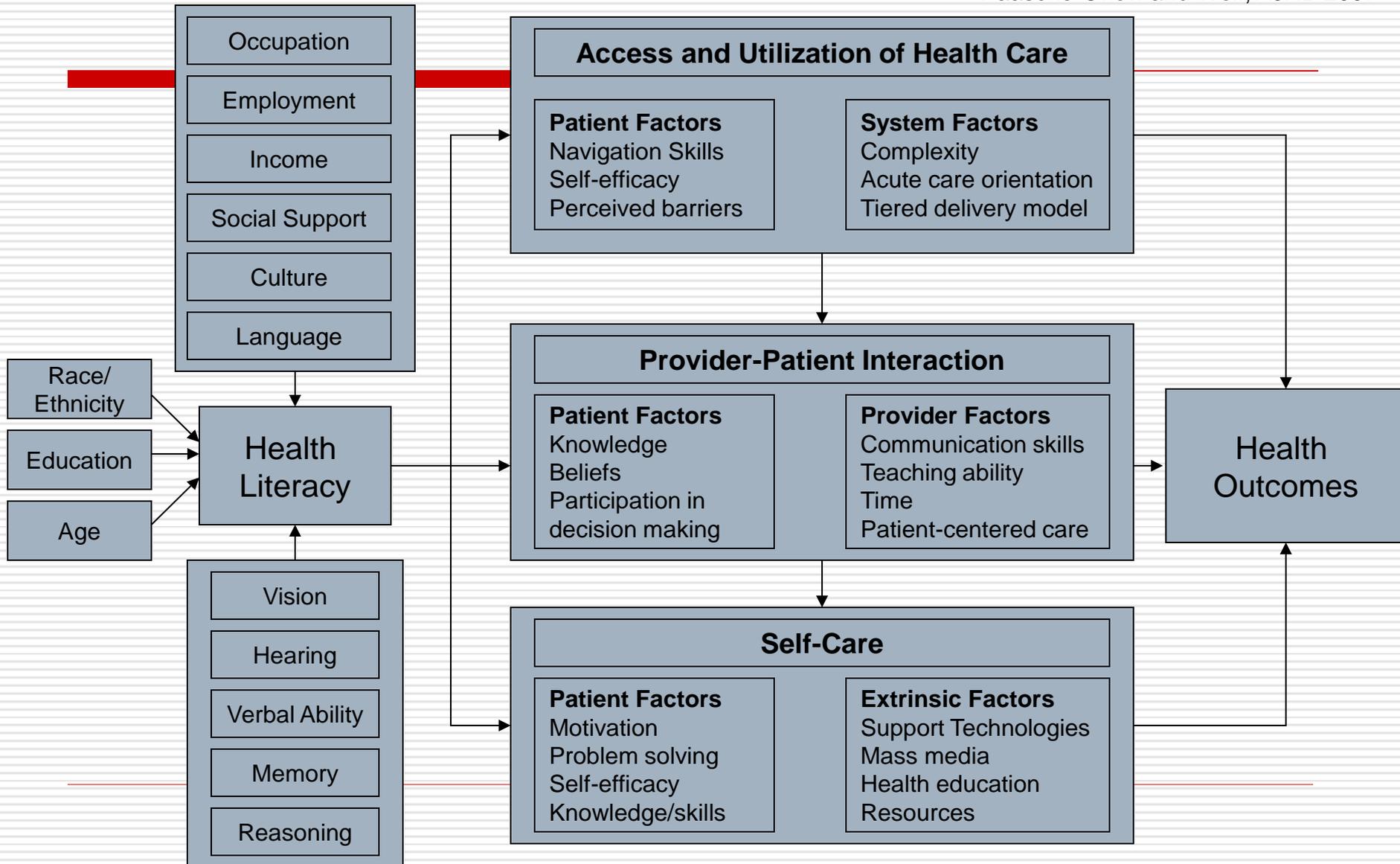
- Limited literacy independently predicts all-cause and cardiovascular deaths in the elderly (39.4% vs 18.9% with HR 1.52, CI 1.26-1.83)





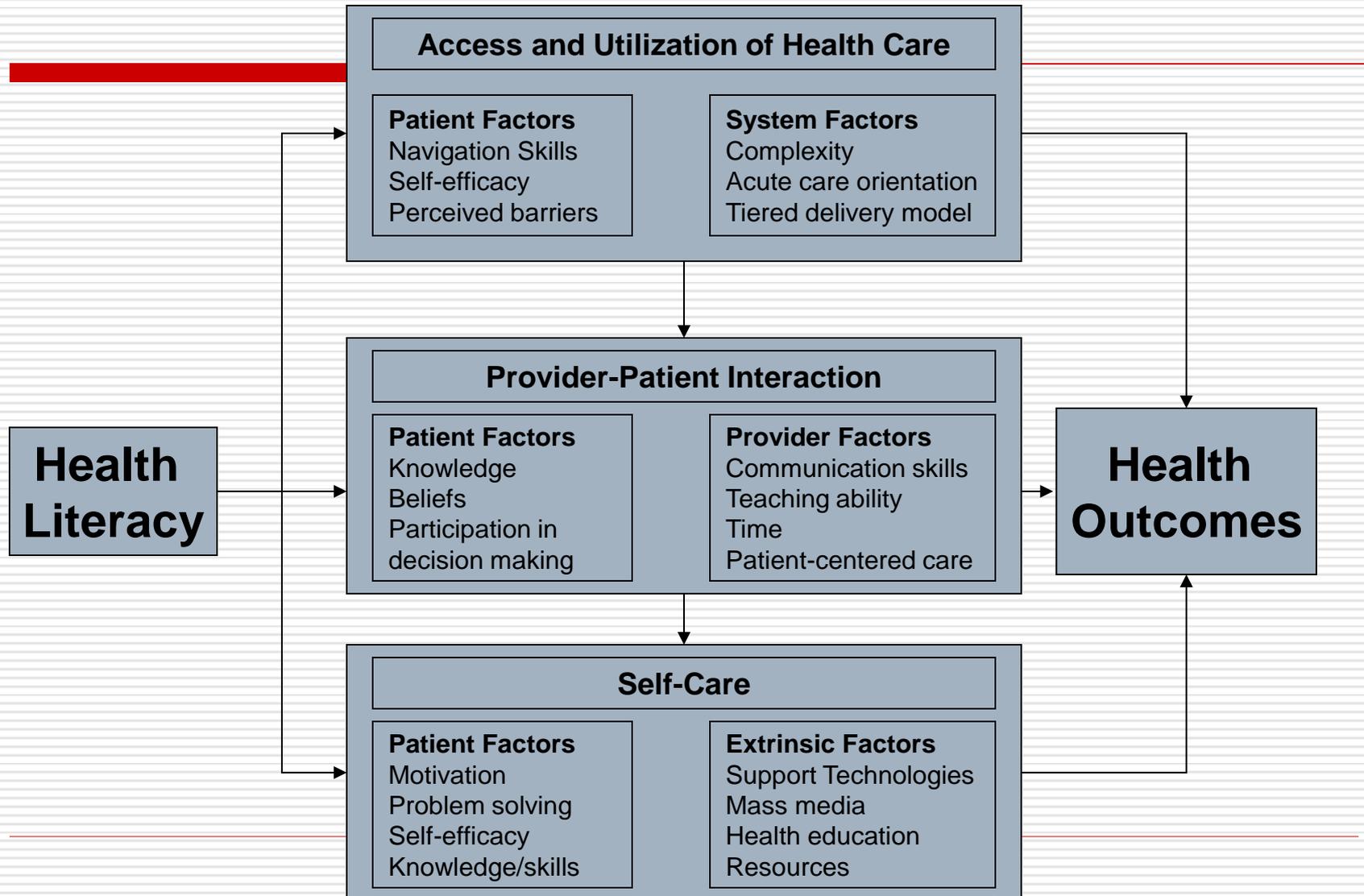
Causal Pathways between Limited Health Literacy and Health Outcomes

Paasche-Orlow and Wolf, AJHB 2007



Causal Pathways between Limited Health Literacy and Health Outcomes

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Example: Medication Adherence

- 204 patients w/ HIV
- ↓ medication adherence was ↑ among AA
- Adj: excluding HL, AA were 2.40 (1.14–5.08) times more likely to be nonadherent
- With HL included in final model
 - effect of race diminished to nonsignificance
 - HL was a significant independent predictor of nonadherence 2.12 (1.93–2.32)

Example:

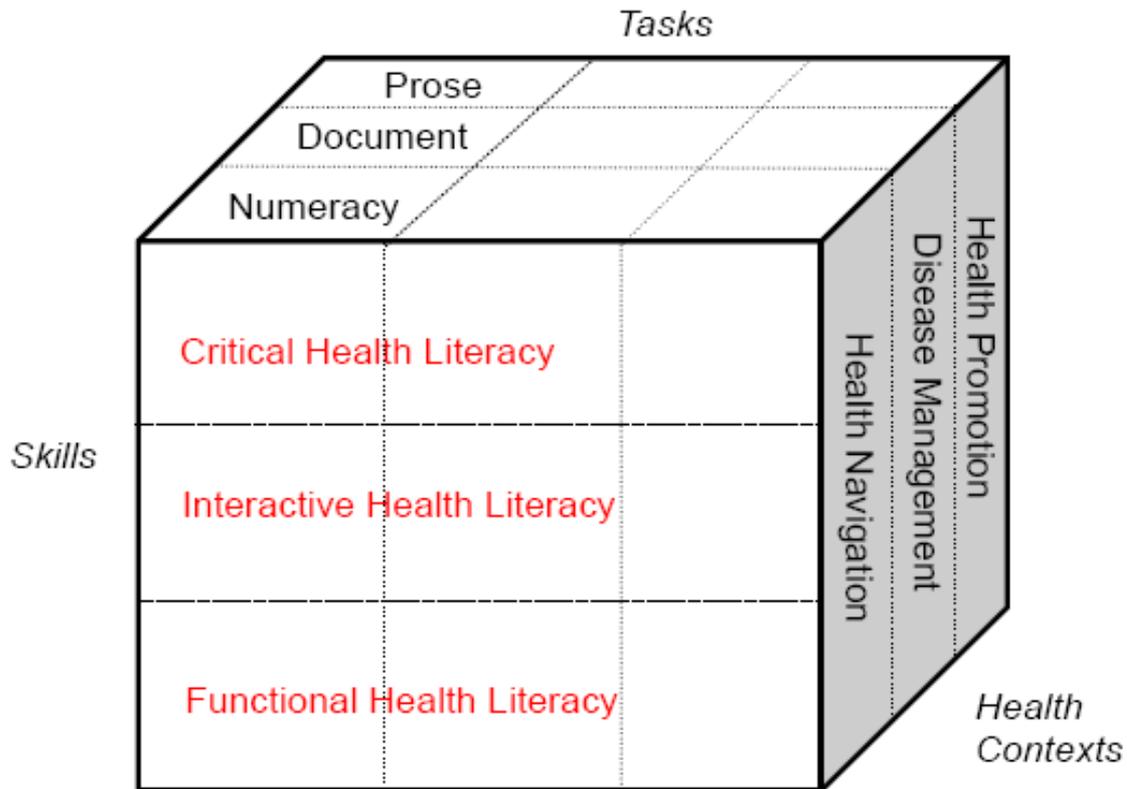
End-of-Life Decision Making

- AA more likely than W to want aggressive care
- Ss asked preferences after hearing a verbal description of advanced dementia and again after 2 min video (P/P)
- Unadj: AA OR 4.8 (2.1–10.9) opt aggressive care (verbal)
- Adj: the effect of race: OR 1.1 (0.3–3.2)
- Unad: low HL OR 17.3 (6.0–49.9), marg HL, OR 11.3 (4.2–30.8) opt aggressive care (verbal)
- Adj: low HL OR 7.1 (2.1–24.2), marg HL OR 5.1 (1.6–16.3)
- W/ Video - no differences by level of HL or by Race

Goals

- Define Environmental HL
 - What are the skills in this domain?
 - Measure EHL
 - For research?
 - Study EHL
 - Improve EHL
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What are the Skills, Tasks, and Contexts of EHL?



What are the measurement options?

- REALM-like?
 - TOFHLA-like?
 - Other approaches?
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How many of these words can you read aloud and pronounce correctly, each within five seconds? Start with the first column, reading down. Skip those you cannot read.

Fat	Fatigue	Allergic
Flu	Pelvic	Menstrual
Pill	Jaundice	Testicle
Dose	Infection	Colitis
Eye	Exercise	Emergency
Stress	Behavior	Medication
Smear	Prescription	Occupation
Nerves	Notify	Sexually
Germs	Gallbladder	Alcoholism
Meals	Calories	Irritation
Disease	Depression	Constipation
Cancer	Miscarriage	Gonorrhea
Caffeine	Pregnancy	Inflammatory
Attack	Arthritis	Diabetes
Kidney	Nutrition	Hepatitis
Hormones	Menopause	Antibiotics
Herpes	Appendix	Diagnosis
Seizure	Abnormal	Potassium
Bowel	Syphilis	Anemia
Asthma	Hemorrhoids	Obesity
Rectal	Nausea	Osteoporosis
Incest	Directed	Impetigo

Thank you!

□ I'd be happy to hear you questions and ideas.

mpo@bu.edu

