A Health Literacy Perspective on Consumer Health Knowledge, Skills, and Behavior

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What’s confusing or hard to understand about food and nutrition?
What Do These Terms Mean to the Person on the Street?

- Nutritional quality
- Dietary intake
- Food preparation
- Healthy eating
What Do These Numbers and Abbreviations Mean to the Person on the Street?

Only 5g of sugar

Serving size 2 oz (56g – about 1/8 box)

Sodium 0mg 0%

2000 calorie diet
The Food Production Chain

- Production
- Distribution
- Processing
- Retail
- Home Preparation
- Restaurant Preparation
- Restaurant
- Home Consumers
- Restaurant Consumer
- Consumers
Let’s Remember, Food Has Risks and Benefits

Risks
- Pathogens
- Places/Settings
- Behaviors
- Poor health

Benefits
- Pleasure/enjoyment
- Good health and nutrition
- Connection/experiences
  - People bond over food
  - Traditions
  - Culture
  - Celebrations
- Seasons and lifestages
- …and so much more!
A health literacy perspective helps explain:

- Lack of knowledge
- Disinterest
- Misinformation
- Misunderstanding
- Confusion
- Not following recommended behaviors
The Gap
What are adult literacy and numeracy baselines?
Average U.S. Adult Literacy Skills

- **Literacy: 270 on 500 point scale**
  - Below international average (23 OECD countries)
  - Only 12% of population at highest level of proficiency
  - Average tasks relate to putting 2 pieces of text or information together, paraphrasing, comparing and contrasting, and low level inferences
  - At least 18% of population would struggle with average tasks

Average U.S. Adult Numeracy Skills

- **Numeracy: 253 on 500 point scale**
  - Below international average (23 OECD countries)
  - Only 9% of population at highest level of proficiency
  - Average tasks relate to explicit or visual math content with few distractors; two-step calculations with whole numbers and common decimals, percents, and fractions; simple measurement
  - At least 30% of population would struggle with average tasks

About 1/3 of adults have basic or below basic health literacy skills, affecting their ability to find, understand, and use health information and services.

Kutner et al. National Assessment of Adult Literacy, 2006
What is Health Literacy?

- Obtain
- Process
- Understand
- Decide

Health Information and Services

Sources: National Library of Medicine, Healthy People
How is Health Literacy Different from General Literacy?

- **Builds on literacy and numeracy skills**
- **Also includes**
  - Cultural and contextual factors
  - Beliefs, experience and preferences
  - Topic area and conceptual knowledge, such as
    - knowledge of the body and how it works
    - terms for specific health conditions
    - scientific methods, results, and risk
- **Think of a public health ecological model**
  - Communication and health literacy part of complex set of interactions and results
A “people and places” framework
Maibach EW, Abroms LC, Marosits M. 2007

Population health & environmental outcomes

Behaviors of the people in the population

**Attributes of people**
- Smallest
- Level of Aggregation
- Largest

**The attributes of place**
- Smallest
- Level of Aggregation
- Largest

**Individuals**
- Cognitions:
  - knowledge
  - beliefs
  - self-efficacy
- Affect
- Skills
- Motivation
- Intentions
- Biological predispositions
- Demographics

**Social Networks**
- Size and connectedness of personal network
- Social support and modeling by:
  - family
  - peers
  - mentors
- Opinion leaders

**Population or Community**
- Social norms
- Culture
- Social cohesion
- Collective efficacy
- Social capital
- Income
- Disparities
- Racism

**Local-Level**
- (e.g., home, school, neighborhood, local stores, workplace, city)
- Availability of products & services
- Physical structures
- Social structures:
  - laws and policies
  - enforcement
- Cultural & media messages

**Distal-Level**
- (e.g., state, region, nation, world)
- Availability of products & services
- Physical structures
- Social structures:
  - laws and policies
  - enforcement
- Cultural & media messages
Concepts and meaning, not syllable counts

- **Expert v. lay understanding**
  - “Healthy” and “eating” may be familiar words but “healthy eating” an unfamiliar concept

- **Knowledge of discrete terms v. concepts, process, and results**
  - Nutritional value of a specific product but not how product relates to “healthy eating,” total calories, and changes in weight
Outcomes Associated with Limited Health Literacy

- **Health outcomes**
  - Taking medications appropriately
  - Interpreting labels and health messages
  - Seniors’ health status and quality of life
  - Mortality

- **Health services**
  - Hospitalization
  - Emergency care visit
  - Flu immunization

- **Knowledge and comprehension**

Berkman et al 2011 Health Literacy Interventions and Outcomes: An Updated Systematic Review
Health Literacy

- Communication
- Decision-making
- Education
- Behavior
Key Elements of Communication

1. Sender
2. Message
3. Channel
4. Environment
5. External/Internal Noise
6. Listener
7. Decoder
8. Feedback

Goal: shared understanding

Knowledge Questions I

- What do experts think people should know about food? Do experts from different disciplines agree on the knowledge base?

- Lack of clarity about knowledge base
  - Messaging consequences
    - Multiple, confusing, and conflicting messages
  - Health literacy consequences
    - People are confused, misinformed, rely on prior knowledge and sources they can understand
  - Behavioral consequences
    - People’s behavior may conform with some or none of expert recommendations, may appear “irrational,” labeled “illiterate”
How well do experts’ expectations match people’s interest in knowing and capacity to know? Do experts expect too much knowledge that isn’t useful?

- Steven Pinker’s “culture of knowledge” – experts incorrectly believe that others know what they know.

Inaccurate assumptions about knowledge

- Messaging consequences
  - Too much irrelevant information

- Health literacy consequences
  - People are confused, misinformed, rely on prior knowledge and sources they can understand

- Behavioral consequences
  - People’s behavior may conform with some or none of expert recommendations, may appear “irrational,” labeled “illiterate”
Skills Questions

- What do experts think people need to do to eat a “healthy diet?” Are these skills they have already or need to develop? How will they develop them?

- Inaccurate assumptions about skills
  - Health literacy consequences
    - Experts underestimate number and complexity of “healthy diet” tasks
    - Recommendations scientifically accurate but behaviorally unrealistic
    - People exposed to messages encouraging behaviors they aren’t prepared to engage in
  - Behavioral consequences
    - People’s behavior may conform with some or none of expert recommendations, may be labeled “non-adherent,” “non-compliant” or “stupid”
CDC's Clear Communication Index

- Clarity requires
  - Primary audience
  - Easy to find main message
  - Familiar words and numbers
  - Information designed to skim, scan, and locate
  - Calls to actions, health behaviors with explanations and directions
  - Risks and benefits with explanations
  - No calculations

www.cdc.gov/ccindex
Example: Every Day, Every Time Manageable “Bundle” of Food Safety Behaviors

- Practices (skills/steps)
- Processes (steps that have sequences that matter)
- Props (equipment/tools needed to “execute”)
Some Research and Practice Questions from a Health Literacy Perspective

- **Individual level**
  - How can people cultivate the knowledge and skills that enable them to eat in health-promoting ways?

- **Organizational level**
  - How can organizations provide clearly expressed, relevant, and accurate information and support skill development so that people can eat in health-promoting ways?

- **Social/environmental level**
  - How can we design environments that help people navigate food choices and eat in health-promoting ways?
How Much Does Health Literacy Contribute to Food Knowledge and Skills?

How Much Do Food Knowledge and Skills Contribute to Overall Goal?
Final Recommendation and Caution

- Health literacy concept should illuminate audience’s or end users’ perspectives, experiences, and needs and practical solutions.

- Health literacy concept shouldn’t be used to justify overly rational or education-heavy solutions.
What questions do you have?

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www.cdc.gov/healthliteracy
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