Health Literacy

Bridging gaps for better health outcomes

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Disclosures

• Advisory Boards
  – Lilly, Novartis

• Research Funding
  – CIHR, Heart and Stroke Foundation and more
  – GoodLife Fitness Chair
  – Apple
Toronto Rehab Institute
University Health Network

- 2400 patients / year
- 4-6 months
- On-site, virtual, hybrids
- >100 languages; range of SES
Objectives

• Define health literacy
• Relationship between health literacy and health outcomes
• Health literacy in the US
• 5 strategies for low health literacy
• Share resources
“Health and the City” – On the Streets of NYC

- Many people unaware of medical terms like “hypertension”, “angina”
- Many people have concerns about the patient–professional interaction

Health and the City, YouTube. https://www.youtube.com/watch?v=iFCblxW4db0
What is health literacy?

“The ability to access, understand, evaluate, and communicate information as a way to promote, maintain and improve health in a variety of settings across the life-course.”

Health Literacy and Health Outcomes

Limited literacy skills are one of the strongest predictors of poor health outcomes for patients

- Less likely to understand their disease and symptoms
- Less likely to know how to monitor/manage their condition
- Have greater difficulty using devices correctly
- Make more errors taking medication
Health Literacy and Health Outcomes

Limited literacy skills are one of the strongest predictors of poor health outcomes for patients

- Miss appointments and tests
- Receive fewer preventive services
- Use more inpatient and emergency department care
- Cost the healthcare system more money

Individuals with limited health literacy

rawpixel.com - www.freepik.com
Health Literacy and Coronary Artery Disease

Review article

Health literacy and coronary artery disease: A systematic review

Gabriela Lima de Melo Ghisi\textsuperscript{a, *}, Gabriela Suéllen da Silva Chaves\textsuperscript{b}, Raquel Rodrigues Britto\textsuperscript{b}, Paul Oh\textsuperscript{a}

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Patient Education and Counseling 2014

Low health literacy was consistently associated with:

- Increased hospital readmissions
- Increased anxiety
- Lower social support
- Low health-related quality of life
Health Literacy and Self-Management

Back at home...

Looking at exercise prescription...
I feel so dumb. I can’t remember what any of this means – HR, bpm, Pre, Post, RPE, RT, EX

Prescribed antiplatelets post op...
I better stop taking these pills. I heard something on the radio about pills being contaminated.

Looking at glucometer before exercise...
70mg/dL...great! I finally got my blood sugar down and I’m good to go

Holding Patient Package Insert
My pharmacist said to read this list of adverse effects but I don’t know what those are, and I can’t read.
Health Literacy of US Adults

Only 12% of US adults have proficient health literacy (National Assessment of Adult Literacy, 2003) and even fewer (9%) have proficient numeracy.

Kutner M et al. The Health Literacy of America’s Adults: Results from the 2003 National Assessment of Adult Literacy. 2006.
Taking Medications

Over 1/3 of US adults (77 million people) would have difficulty following directions on a drug label.
Prescription Labels: We Can Do Better

Doctor’s Office/Pharmacy

“Take one capsule 4 times daily”

“1 cap QID”

Prescription Labels: We Can Do Better

Doctor’s Office/Pharmacy

“Take one capsule 4 times daily”

“1 cap QID”

Back at home

I’ll take one pill at 6am when I wake up.

Then what?

How long do I wait before I take the next one?

Financial Burden of Low Health Literacy

- Additional cost of $143 to $7,798 USD annually per person with limited health literacy
- Up to $73 billion a year in excess health care costs

Bridging the Gap - there’s a lot we can do

1. User-centered design
2. Use plain language and clear design
3. Assess health literacy
4. Check for understanding
5. Universal precautions
1. User-Centered Design

 Designed for the patient, with the patient

 Ghisi GLM
Engage Your Patients

- Assess information needs
- Focus Groups
- Surveys/questionnaires
- Interviews
- Patient Partners
- Virtual patient reviewers
2. Use Plain Language and Clear Design

“A written communication is in plain language if its wording, structure, and design are so clear that the intended readers can easily find what they need, understand it, and use it.”

Readable materials should be written no higher than the 8\textsuperscript{th} grade reading level, and it’s even better to aim for the 5\textsuperscript{th} grade reading level.

U.S. Department of Education

We All Seek Clarity

“Higher education customarily encompasses instructional strategies and techniques that promulgate and reward unnecessarily esoteric inclusion of professionally specific articulations and convoluted expressions of language devoid of clarity which are incomprehensible to those unassociated with said linguistic articulations.”

Natalie Ames, Three Cheers for Plain Language

Plain Language Best Practices

Improve patient and caregiver materials by following plain design, writing, and numeracy principles

- Avoid words with 3 or more syllables, when possible
- Avoid, explain, or teach the meaning of words likely to cause confusion
- Write in the active voice
- Use the first or second person
- Limit sentences to less than 15 words
- Skip ‘nice-to-know’ information

Plain Language Best Practices

continued...

- Use **bolded** or **enlarged** headings and chunk information
- Use 12 point text or larger (e.g., Times New Roman)
- Limit use of italics and all CAPS
- Leave white space
- Use numerals instead of words (1 instead of one)
- On slides: remove clutter, focus on one main idea per slide, use dark text on a light background, choose useful graphics

Activity – Practice Plain Language
Atherosclerosis Example - complex

Atherosclerosis¹

When plaque clogs your arteries, that’s called atherosclerosis. Cholesterol, fatty substances, cellular waste products, calcium and fibrin make up these deposits. As plaque builds up, the wall of the blood vessel thickens. This causes the vessel to lose its elasticity and narrows the channel within the artery, which reduces blood flow. That, in turn, lessens the amount of oxygen and other nutrients reaching the body. Where plaque develops, and the type of artery affected, varies with each person. Plaque may partially or totally occlude blood flow through large- or medium-sized arteries in the heart, brain, pelvis, legs, arms or kidneys. This can precipitate various conditions, including: coronary heart disease, angina, carotid artery disease, PAD, and chronic kidney disease.
Plain Language Example: Atherosclerosis

What is atherosclerosis?

Blood flows through arteries in your body. Sometimes layers of fat, also known as plaque, build up inside your arteries. This is called atherosclerosis. Over time, the plaque can block some, or all, of your artery. This means you have less blood flowing through the artery because plaque is in the way.

What health problems can atherosclerosis cause?

Plaque can build up in the arteries of your heart, brain, pelvis, legs, arms, or kidneys. Less blood flow to these parts of your body can lead to:

- Coronary heart disease (plaque in the arteries of your heart)
- Angina (chest pain from less blood flow to your heart)
- Carotid artery disease (plaque in the arteries of your neck)
- Peripheral artery disease (plaque in the arteries of your arms or legs)

If plaque blocks blood flow to your heart or brain you can have a heart attack or stroke.
<table>
<thead>
<tr>
<th>Medical term/jargon</th>
<th>Try this instead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>High blood pressure</td>
</tr>
<tr>
<td>Glucose</td>
<td>Sugar</td>
</tr>
<tr>
<td>Angina</td>
<td>Chest pain</td>
</tr>
<tr>
<td>Chronic</td>
<td>Lasting a long time</td>
</tr>
<tr>
<td>Sedentary</td>
<td>Sitting</td>
</tr>
<tr>
<td>Hypoglycemia</td>
<td>Low blood sugar</td>
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</tbody>
</table>
Plain Language & Clear Design Resources

- Plain Language Lexicon
- Readability formulas – determine the (grade) reading level
  - SMOG – simplified measure of gobbledygook
  - Flesch Reading Ease
  - FOG – Gunning FOG Index
- Clear design (plainlanguage.gov)
  - Principles of clear design include recommendations for fonts, graphics, headings, and overall layout

Cutts, Martin. 2011. Plain English Lexicon. A guide to whether your words will be understood.
“Higher education customarily encompasses instructional strategies and techniques that promulgate and reward unnecessarily esoteric inclusion of professionally specific articulations and convoluted expressions of language devoid of clarity which are incomprehensible to those unassociated with said linguistic articulations.”

We shouldn't use big words that are hard to learn.

http://gunning-fog-index.com
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3. Assess Health Literacy

- Rapid Estimate for Adult Literacy in Medicine (REALM)
- Test of Functional Health Literacy in Adults (TOFHLA)
- Newest Vital Sign (NVS)
- Medical Term Recognition Test (METER)
- Brief Screening Questions (BSQ)
- Calgary Charter tool
- Health Literacy Questionnaire (HLQ)
3. Assess Health Literacy: Activity - Newest Vital Sign

- If you eat the entire container of ice cream, how many calories will you eat?
- If you are allowed to eat 60 grams of carbohydrate as a snack, how much ice cream could you have?
- You usually have 42 grams of saturated fat each day, which includes 1 serving of ice cream. If you stop eating ice cream, how many grams of saturated fat would you be consuming each day?

3. Assess Health Literacy: Activity - Newest Vital Sign

• If you usually eat 2500 calories in a day, what percentage of your daily value of calories will you be eating if you eat one serving?

• Pretend that you are allergic to the following substances: penicillin, peanuts, latex gloves, and bee stings. Is it safe for you to eat this ice cream?

![Nutrition Facts](Image)

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<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Amount per serving</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calories</td>
<td>250</td>
<td>Fat Cal</td>
</tr>
<tr>
<td><strong>%DV</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fat</td>
<td>13g</td>
<td>20%</td>
</tr>
<tr>
<td>Sat Fat</td>
<td>9g</td>
<td>40%</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>28mg</td>
<td>12%</td>
</tr>
<tr>
<td>Sodium</td>
<td>55mg</td>
<td>2%</td>
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<tr>
<td>Total Carbohydrate</td>
<td>30g</td>
<td>12%</td>
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<tr>
<td>Dietary Fiber</td>
<td>2g</td>
<td></td>
</tr>
<tr>
<td>Sugars</td>
<td>23g</td>
<td></td>
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<tr>
<td>Protein</td>
<td>4g</td>
<td>8%</td>
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</tbody>
</table>

*Percentage Daily Values (DV) are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

**Ingredients:** Cream, Skim Milk, Liquid Sugar, Water, Egg Yolk, Brown Sugar, Milkfat, Peanut Oil, Sugar, Butter, Salt, Carrageenan, Vanilla Extract.

# 3. Assess Health Literacy: BRIEF

<table>
<thead>
<tr>
<th>Question</th>
<th>Always (1)</th>
<th>Often (2)</th>
<th>Sometimes (3)</th>
<th>Occasionally (4)</th>
<th>Never (5)</th>
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<tr>
<td>How often do you have someone help you read hospital materials?</td>
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<td>How often do you have problems learning about your medical condition because of difficulty understanding written information?</td>
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<td>How often do you have a problem understanding what is told to you about your medical condition?</td>
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Scoring categories:
- $<12$ = inadequate HL
- $13-16$ = marginal HL
- $17-20$ = adequate HL

### 4. Check for Understanding

**Possible signs of low health literacy:**

- Patient may appear frustrated and angry about a treatment that has not worked
- Incidence of high frequency of visits or not showing up at all for scheduled visits
- Despite repeating the same instructions over several visits, the condition may still not be managed
- When given forms to fill out, the patient may say, “I left my reading glasses at home.”
- The patient may bring someone along to the appointment and defer to them to answer questions
- Noticeable language barriers
- Observing non-verbal signs of lack of understanding. For example, the patient may just nod and agree, so it goes undetected

Adapted from Health Literacy in Canada: A Primer for Students. Hoffman-Goetz et al. 2014
The Danger of Assumptions
Ask Me 3™

Patient is encouraged to ask 3 basic questions

• What is my main problem?
• What do I need to do?
• Why is it important for me to do this?

A patient **forgets 40-80%** of the medical information they hear at their doctor’s visit

**Nearly half** of what they do remember is **wrong**

### Teach-Back Method

| Explain concept/instructions to patient | Tell the patient you want to check that you explained it clearly | Ask the patient to use their own words to tell you what they will do next or what they understood | Review details as needed |

5. Universal Precautions

Always communicate in ways that anyone can understand

- Assume all patients and caregivers may have difficulty understanding health information
- Even people with stronger health literacy skills benefit from health literacy interventions

The Danger of Assumptions

image from aboutcancer.com
A Few Health Literacy Resources

- Institute for Healthcare Advancement
- Boston – Health Literacy Tool Shed
- AHRQ Health Literacy Universal Precautions Toolkit
- AHRQ “Always Use Teach-back!” training toolkit
- PLAIN – Plain Language Association International
- Plain Language Lexicon
- Plainlanguage.gov
Welcome to Health e-University

You can prevent and manage chronic disease.

The colleges of Health e-University help people live and thrive with chronic disease.

CARDIAC COLLEGE

- Understand heart disease.
- Manage your heart condition.
- Make small changes for better health with the THRIVE program.

DIABETES COLLEGE

- Understand diabetes.
- Manage your diabetes.
- Make small changes for better health with the THRIVE program.
5 Program Pillars

- Understand & Treat Your Condition
- Get Active
- Feel Well
- Eat Healthy

Take Control of Your Health
Welcome to Cardiac College™

The Cardiovascular Prevention and Rehabilitation Program at Toronto Rehab helps people live and thrive with heart disease. If you had a heart attack, heart surgery, valve surgery, an angioplasty, an arrhythmia, angina or other heart conditions, this program can help you:

- improve your health
- improve your fitness
- make lifestyle changes

Find tools to help you manage heart disease, get active, eat healthy, and feel well.

Visit the toolbox

A Guide to Help You Live and Thrive with Cardiovascular Disease

View the guide

Donate today to

Toronto Rehab Foundation ♦ UHN

Small changes for better health

Partners
Cardiac Guide

A Guide to Help You Live and Thrive with Cardiovascular Disease

TREAT HEART DISEASE
How your heart works and common types of heart problems

TREAT HEART DISEASE
Common tests and treatments for heart disease

TREAT HEART DISEASE
Taking your heart medicines

TREAT HEART DISEASE
Managing your symptoms

GET ACTIVE
Staying active for a healthy heart

EAT HEALTHY
Eating well for a healthy heart

FEEL WELL
Managing stress for a healthy heart

FEEL WELL
Enjoying a healthy relationship and sexual intimacy

TAKE CONTROL
Setting goals for a healthy heart
Diversity - Need and Opportunity
Multilingual Resources

French
Spanish
Portuguese
Punjabi
Chinese

Collaborative development and evaluation projects
Thank You for Attending!

Discussion and Questions

Contact: paul.oh@uhn.ca