Are they readable?

Literacy level of online breast cancer patient education information at local hospital websites

Lin Wu, MLIS, AHIP
Health Sciences Library

Yin Su, MD
Department of Microbiology, Immunology, and Biochemistry
University of Tennessee Health Science Center
Understandable?
Objectives

• Assess readability levels of patient education materials related to breast cancer from local hospital websites
• Explore health sciences librarians’ roles
• Promote health literacy and empower patients
U.S. Breast Cancer Facts

2007: 40,598 deaths
202,964 cases

2010: 40,000 deaths
207,090 new cases
2.5 million survivors

Data source: http://apps.nccd.cdc.gov/uscs/
More Facts

• By 2008, more than 2 million women alive had a history of breast cancer

• Based on the rates from 2005-2007, 12.15% of women will be diagnosed with breast cancer at some time during their lifetime

E-Patients

• 66% of Internet users look online for information about a specific disease or medical problem.

• Over 43% of women recently diagnosed with breast cancer use the Internet to find health information.

Data sources: http://tinyurl.com/3ea3eah
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1550570/
Methodology

• Data collection in three months

• The Flesch-Kincaid (FK) grade formula

• Microsoft Office Word 2010
Local Hospitals

- Methodist Healthcare System
- UT Medical Group
- Baptist Memorial Hospital – Memphis
- The Regional Medical Center at Memphis (No patient resources page)
- Saint Francis Hospital Bartlett
- St. Jude Children Hospital Memphis (No information page)
- The West Clinic Memphis
- Memphis VA Hospital (No information page)
## Readability Statistics in Word

<table>
<thead>
<tr>
<th>Paragraphs</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sentences</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Averages</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sentences per Paragraph</td>
<td>2.0</td>
</tr>
<tr>
<td>Words per Sentence</td>
<td>16.0</td>
</tr>
<tr>
<td>Characters per Word</td>
<td>5.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Readability</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive Sentences</td>
<td>25%</td>
</tr>
<tr>
<td>Flesch Reading Ease</td>
<td>48.4</td>
</tr>
<tr>
<td>Flesch–Kincaid Grade Level</td>
<td>10.4</td>
</tr>
</tbody>
</table>

\[(0.39 \times \text{average\_words\_sentence}) + (11.8 \times \text{average\_syllables\_word}) - 15.9\]
Findings

• Not every local hospital created online patient materials on breast cancer
• More than 24 files collected from 8 hospitals
• More than 42% of breast cancer patient education materials were easy-to-read
• More than half (58%) of the patient education materials were written above the recommended sixth-grade reading level
Study Limitations

• Numbers of hospitals
• Localization
• Time to collect data
Librarians can be a Bridge...

Librarians/Information Professionals

- Patients
- Physicians
- Nurses

Educational materials
Health literacy
Power patients
Recommendations

- Readability and comprehension
- Literacy level
- Audience
- Cultural competencies
- Currency
Questions?

Thank You!