

Systematic review of Spanish language cancer educational materials: A first step in improving message reach and effectiveness

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Outline

- Context
- Identification of materials
- Readability assessment
- Language adjustment
- Suitability assessment of materials
- Results
- Analysis

The Hispanic Population in SC

- SC has the fastest growing Hispanic population in the US
 - Up 460% from 1990
 - 30,000 to 168,000 (1990 – 2007)
- 400,000 – 500,000
 - Immigration rates, birth rates, and school enrollment rates
- Young (median: 27 y.o. males; 25 y.o. females)
- 63% Mexican
- Remaining:
 - Puerto Rican
 - Central American
 - South American
 - Other Caribbean origin

The Impact of Breast and Cervical Cancer

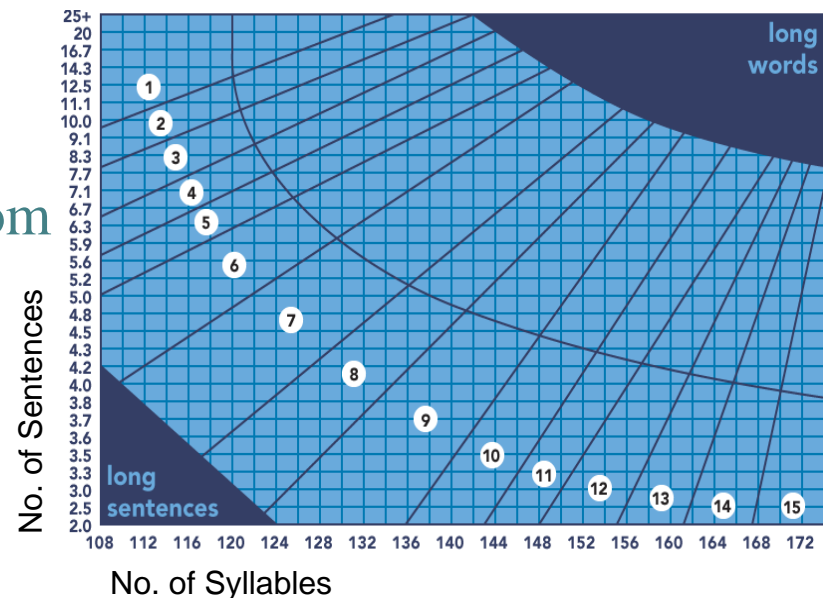
- 2nd leading cause of death: Cancer
- Diagnosed: 1 in 3 (Women)
- Breast cancer is leading cause of cancer death among women
- Cervical cancer incidence is two times higher among Hispanic women than their Caucasian counterparts
- Cervical cancer mortality is 50% more among Hispanic women than their Caucasian counterparts
- Screening/Early Detection: Mammograms and Pap tests
 - Lowest among no health insurance; and
 - Immigrant women in the country less than 10 years

Materials

- Identify
 - Cancer
 - Spanish
 - NCI, ACS, National Alliance for Farmworker Health, Merck, Krames Communications, Armstrong Foundation, Susan G. Komen
- 25 Materials

Readability Assessment

- **SMOG (Simplified Measure of Gobbledygook)**
 - Three blocks of 10 sentences; Beginning, Middle, End
 - No. of polysyllabic words
 - Nearest square root
 - Add 3
 - Doak et al. (1996)
- **Fry graph**
 - Three blocks of 100 words; Random
 - No. of sentences
 - No. of syllables
 - Average
 - Pink Book



Reviewer: _____

Readability of Latina Health Educational Materials

ID # _____ Title _____
 Sponsor/Publisher _____
 Copyright _____ Revised Date _____

Fry		SMOG	
Passage 1		Passage 1	
Words		Sentences	
Sentences		Polysyllabic Words	
Syllables			
Passage 2		Passage 2	
Words		Sentences	
Sentences		Polysyllabic Words	
Syllables			
Passage 3		Passage 3	
Words		Sentences	
Sentences		Polysyllabic Words	
Syllables			
		Total	
Average		Nearest Perfect Square	
Words		Square Root	
Sentences		Plus 3: (Reading Level)	
Syllables			
Reading Level			

For fewer than 300 words:

- If you have 100 running words, use them. Count the number of syllables and sentences just as you would for longer documents and plot that information on the Fry graph.
- If you have fewer than 100 words in a passage, use them all and then calculate an adjusted number of syllables and sentences:
 $100 \div \text{words} = x$

$\text{sentences} \times x = \text{adjusted \# of sentences}$

$\text{syllables} \times x = \text{adjusted \# of syllables}$

For fewer than 30 sentences:

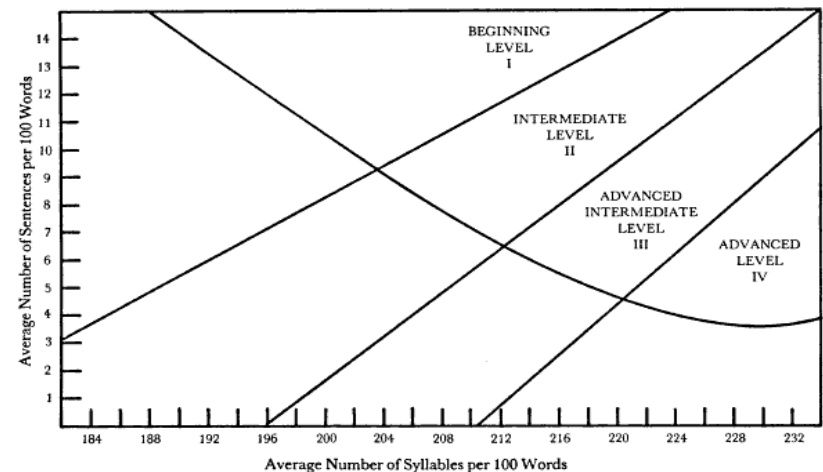
- Count all of the polysyllabic words in text
- Count number of sentences
- Find the average number of polysyllabic words per sentence
- Subtract the total number of sentences from 30
- Multiply that number by the average
- Add that figure to the total number of polysyllabic words
- Find the square root and add 3

Language Adjustment

- Spanish words are longer than English words
 - *Bibliografía* vs. *Pen*
 - *Embarazada* vs. *Pregnant*
 - *Alimentación* vs. *Diet / Nutrition*
 - *Escaleras* vs. *Stairs*
- 2 – 3 Syllables = 90% of Spanish words
- 1 – 2 Syllables = 80% of English words

Language Adjustment cont.

- SOL conversion equation
 - $E = -2.51 + 0.74 * S$
 - E = Score the material should have received were written in English
 - S = Score the Spanish language material received from SMOG
- FRASE graph
 - Use the same numbers from Fry calculation
 - Qualitative
 - Beginner = 1
 - Intermediate = 2
 - Advanced Intermediate = 3
 - Advanced = 4



Suitability Assessment of Materials

Factors

- Content (8)
- Literacy Demand (10)
 - **Readability**
- Graphics (10)
- Layout & Typography (6)
- Learning Stimulation & Motivation (6)
- Cultural Appropriateness (4)

Interpretation

- Total – N/A's → Percent
- *Superior* = 70% – 100%
- *Adequate* = 40% – 69%
- *Not Suitable* = 0% – 39%

Reviewer: _____

Evaluation Form for Latina Health Educational Materials

ID # _____

Title _____

Sponsor/Publisher _____

Copyright _____

Revised Date _____

SMOG _____

Fry _____

SOL _____

FRASE _____

SUITABILITY AND ASSESSMENT OF MATERIALS
(Doak, Doak, & Root, 1996)

Factor to be Rated	Score	Comments
1. CONTENT		
a. Purpose is evident		
b. Content about behaviors		
c. Scope is limited		
d. Summary or review included		
2. LITERACY DEMAND		
a. Reading grade level		
b. Writing style, active voice		
c. Vocabulary uses common words		
d. Context is given first		
e. Learning aids via "road signs"		
3. GRAPHICS		
a. Cover graphic shows purpose		
b. Type of graphics		
c. Relevance of illustrations		
d. Lists, tables, etc. explained		
e. Captions used for graphics		
4. LAYOUT AND TYPOGRAPHY		
a. Layout Factors		
b. Typography		
c. Subheads ("chunking") used		
5. LEARNING STIMULATION, MOTIVATION		
a. Interaction used		
b. Behaviors are modeled and specific		
c. Motivation—self efficacy		
6. CULTURAL APPROPRIATENESS		
a. Match in logic, language, experience		
b. Cultural image and examples		

Score: 2 = Superior, 1 = Adequate, 0 = Not Suitable, NA = Not Applicable

Total Score _____

Total Possible _____

Percent Score _____

SAM Rating (circle one)

Superior

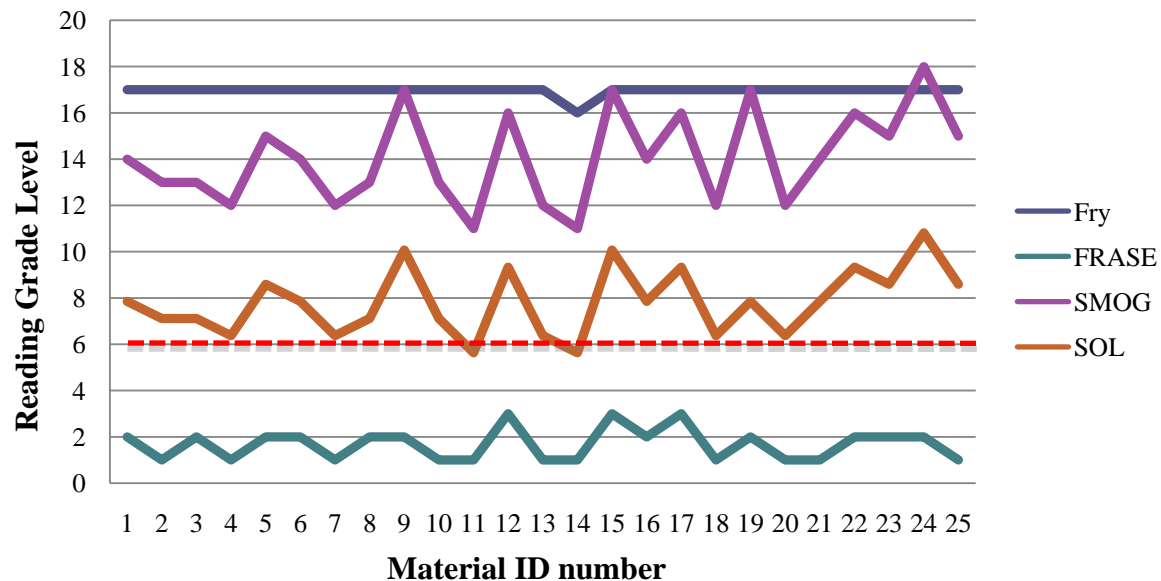
Adequate

Not Suitable

Results – Readability

- SMOG: 14
(11 – 17)
- SOL: 8
(6 – 11)
- Fry: 17
(16 – 17)
- FRASE: 1.6
(1 – 3)

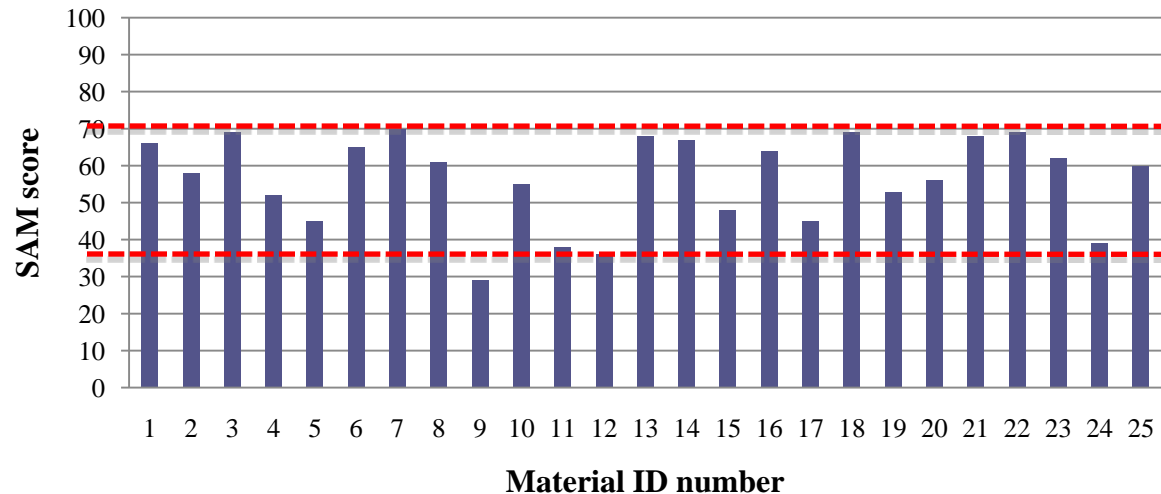
Readability of 25 Spanish language Cancer Education Materials



Results – Suitability

- Mean: 56
- Range: 29 – 70
- *Superior*: 1
- *Adequate*: 20
- *Not Suitable*: 4

**Suitability Assessment of 25 Spanish language
Cancer Education Materials**



Analysis

Factors

- Content
- Literacy Demand
 - Readability
- Graphics
- Layout & Typography
- Learning Stimulation & Motivation
- Cultural Appropriateness

Significance

- No Summary, Unclear Purpose
- Poor writing
 - High reading grade level
- Few graphics
- Cluttered, not organized well
- No interaction with reader
- Not culturally specific/sensitive

Implications and Suggestions

- Low education level
- High reading difficulty
- Little information about behavior
- Not culturally specific, appropriate
- Need literacy assessment tool for Spanish language materials – not just adjustment of existing English language tools
- English vs Spanish version
- Increase screening, decrease mortality

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