Adapting the Newest Vital Sign Health Literacy Measure for Deaf American Sign Language Users

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Nothing to financially disclose

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Background

- Deaf American Sign Language (ASL) users
  - Visual based language
- Fund of information issues despite normal intelligence (6-12)
- Low median English reading level (13,14)

Background

- No available health literacy tool available for Deaf ASL users
- Most current health literacy tools rely on phonetics, pronunciation or extensive reading comprehension

Newest Vital Sign

Nutrition Facts

Serving Size	1/2 cup
Servings per container	4
Amount per serving	
Calories 250	Fat Cal 120
	%DV
Total Fat 13g	20%
Sat Fat 9g	45%
Cholesterol 28mg	12%
Sodium 55mg	2%
Total Carbohydrate 30g	12%
Dietary Fiber 2g	
Sugars 23g	
Protein 4g	8%

* Percent 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 Yolks, Brown Sugar, Milkfat, Peanut Oil, Sugar, Butter, Salt, Carrageenan, Vanilla Extract.

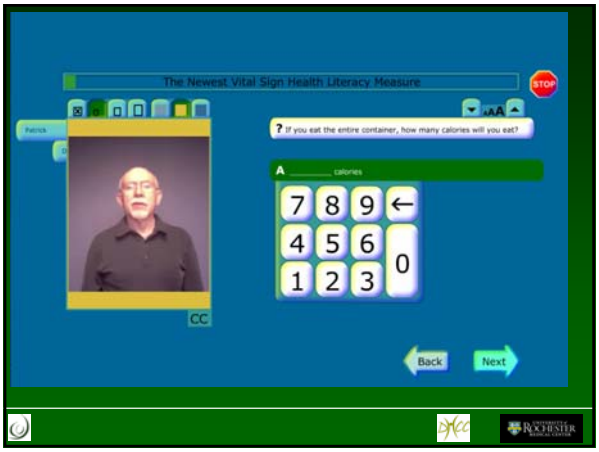
(Weiss, 2005)

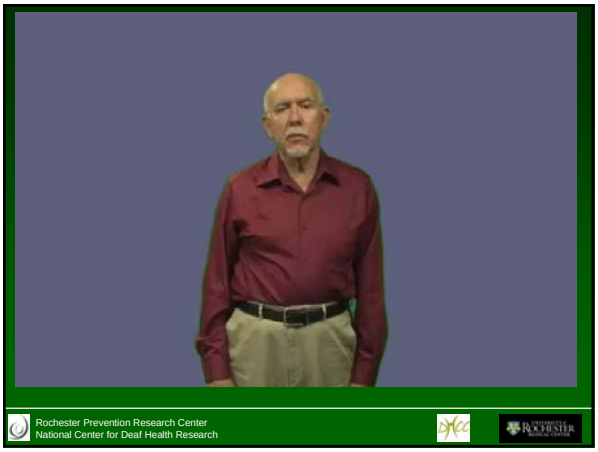
Research Objective

- Create a health literacy measure in American Sign Language (ASL) to assess the prevalence of health literacy and its association with cardiovascular risk factors among Deaf ASL users

Methods

- Adapt and translate Newest Vital Sign (NVS)to create an ASL-NVS version
  - Translation Work Group- translated (and backtranslated)
  - Create a current computer-based survey interface for question administration
  - In-depth cognitive interviews
  - Modify ASL-NVS survey





Cognitive Interviews

	Deaf (n=7)	Hearing (n=7)
Age: mean	52.6y	51.7y
Age: (min, max)	(45, 66)	(41, 63)
Female	71.4%	42.9%
White, non-Hispanic	71.4%	57.1%
Education past HS	71.4%	57.1%
ASL-NVS Score Mean	3.29	4.86

Results

- Individuals reported good understanding of the questions
  - Good language accessibility- multiple options
- Deaf>Hearing reported questions were challenging to answer- deductive reasoning and numeracy issues
- Touch screen sensitivity

Results- Question #2

- Lack of branching on Question #2
  - ♦If you are allowed to eat 60 grams of carbohydrates as a snack, how much ice cream could you have? (Answer: 1 cup or ½ of a container)
  - ◆2 Deaf responded with "½" (no hearing)
    - ♦Cognitive interviews revealed all answered"1/2" to mean "1/2 of a container"- no errors
  - ◆Required modifications to question
    - ♦"Please give full answer with number and measure"
    - ♦"Please give full answer"- Final Version

Results- Question #5

- Misinterpretation of question
  - ◆"Pretend you are allergic to the following substances: penicillin, peanuts, latex gloves, and bee stings- Is it safe to eat?"
- 1 Deaf correctly selected it for wrong reason- identified that she was allergic to latex

Conclusion/Implications

- Deaf ASL Users comprise of a linguistic minority in need of health literacy research
- ASL-NVS is the first ever health literacy measurement accessible in ASL

Future Directions

- Validation of ASL-NVS with Deaf populations will occur with the reading comprehension subtest of PIAT-R
- Use of ASL-NVS to measure effects of low health literacy on cardiovascular risk
- Testing of web- and computer-based NVS for wider dissemination
- Platform development for other linguistic minority groups

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