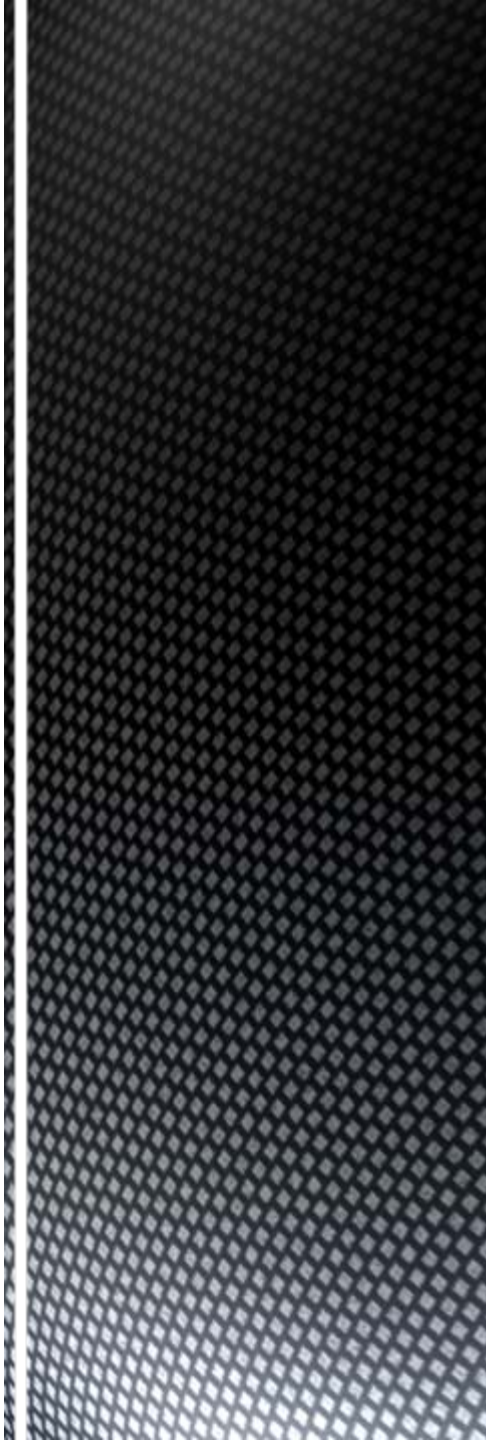
Introduction to Clinical & Translational Research -- Breakout Session:

Using & Creating Questionnaires for Research

Anu Paranjape, MD, MPH
School of Medicine

Sarah Bauerle Bass, PhD, MPH
Thomas F. Gordon, PhD
Department of Public Health



Learning Objectives

- Summarize best practices in question construction and formatting.
- Recognize the importance of questionnaire pre-testing and revision.
- Understand the importance of literacy and cultural competence in questionnaire design.
- Identify sources/resources for doing survey research (e.g., reviews, existing instruments).

Research Issues to Keep in Mind In the Design Process

- Research Goals: Desired Outcomes, Research Questions/Hypotheses

- Reliability Issues: Does the instrument give consistent results when repeatedly applied under the same conditions?

- Validity Issues: Does the instrument measure what it is intended to measure?

Research Issues to Keep in Mind

- Analyses to be employed
- Sample Size, error rates, & generalizability
- Cost-Efficiency
- Levels of Measurement (Types of Data)
  [Nominal, Ordinal, Interval, Ratio]

Question Design Issues

1. Keep the number of questions to a minimum.

2. Funnel questions from general to specific.

3. Put sensitive questions near the end of the survey.

4. Strive for precise measurement—highest level: (e.g., income in dollars, precise occupation, age to the year--not age category). Can always collapse but can't go the other way.

Question Design Issues

5. Avoid “double barreled” questions.
   e.g., *How often do you eat fruits and vegetables?* (Questions with “and” are often double barreled.)

6. Avoid “leading questions”
   e.g., *Doctors used to spend more time with their patients, how would you rate the amount of time your doctor spends with you?*

Question Design Issues

7. Avoid “unbalanced response options”: e.g.,

How important to you is having health insurance?

___ Extremely Important
___ Very Important
___ Somewhat Important
___ Slightly Important
___ Not Important at All

(The above has limited options on the unimportant side.)

Question Design Issues

8. Group questions with related content/topics together. (Respondent does not have to mentally jump back and forth across categories.)

Types of Questions

1. Open ended: e.g.,:

How would you describe your overall health?

_____

2. Closed Ended (Fixed Response) e.g.:

Check the option that best describes your overall health status: ____Excellent
____Good
____Poor
____Very Poor

Types of Questions

3. Dichotomous: (Two Options) e.g., Yes-No; Agree-Disagree; True-False.

4. Ranking Scale e.g.:

Rank your preference for the following types of exercise by giving each a number from 1 (most preferred) to 5 (least preferred):

____ *Walking*
____ *Jogging*
____ *Biking*
____ *Swimming*
____ *Lifting Weights*

Types of Questions

3. Check List: e.g.,

Listed below are several types of exercise—place a check mark by the ones that you do at least once per week:

4. Rating Scale (3pts to any number of points) e.g.:

On a scale of 0-10, where zero is "very poor" and 10 is "excellent", how would you rate your overall health status?

_____

(enter number)

Types of Questions (Alternate Types of Scales)

5. Likert Scale: (Any number of points but each must have a verbal label) e.g., see #2 above.

4. Semantic Differential Scale: (Always 7 points, only ends are labeled – as bipolar opposites) e.g.:

On the scale below, check the line that best reflects your overall health status:

Excellent __:___: ___: ___: ___: ___: ___ ***Very Poor***

Types of Questions

5. Paired Comparisons: Asks respondent to compare items two at a time. Usually requires special software for analysis. e.g.,

Thinking about how types of exercise are similar or different for you to do, using a scale of 0-10 where 10 is "very different" and zero is "not different at all", how different is:

____ walking from jogging?
____ walking from biking?
____ walking from swimming?
____ jogging from biking?
____ jogging from swimming?
____ biking from swimming?

Branching Questions

BOX 14.10

A Branching Question Illustrated

9. Have you consumed any beer in the past seven days?

Yes ------- 1❒ →
No ------- 2❒

9.1 If Yes: How much did you consume in the past week?

3 pints or less ---- 1❒
4 to 9 pints ----- 2❒
10 or more pints -- 3❒

10. Have you ever been married?

Yes ------- 1❒ [Answer questions 11–14]
No ------- 2❒ [Go to question 15]

Matrix Formatting of Questions

Rate each of the following types of exercise on the attributes listed to the left. Place a number 0-10 in the box (zero=none of that attribute and 10=very much of the attribute):

	Walking	Jogging	Biking	Swimming
1. Difficulty				
2. Expense				
3. Access				
4. Pleasurable				

Pretesting Questionnaires

Pretesting:

Trying out a questionnaire to identify content, format, flow, and design flaws for revision before the instrument is used.

Pretesting Questionnaires

Pretesting Procedure:

1. Have the instrument reviewed by colleagues familiar with the research approach and the targeted respondents.
2. Administer to a small number of potential respondents, then quiz them about understanding, ease of use, flow, etc.

Pretesting Questionnaires

Pretesting is Critical !

It must be done.

Don't skimp on this phase of a research project.

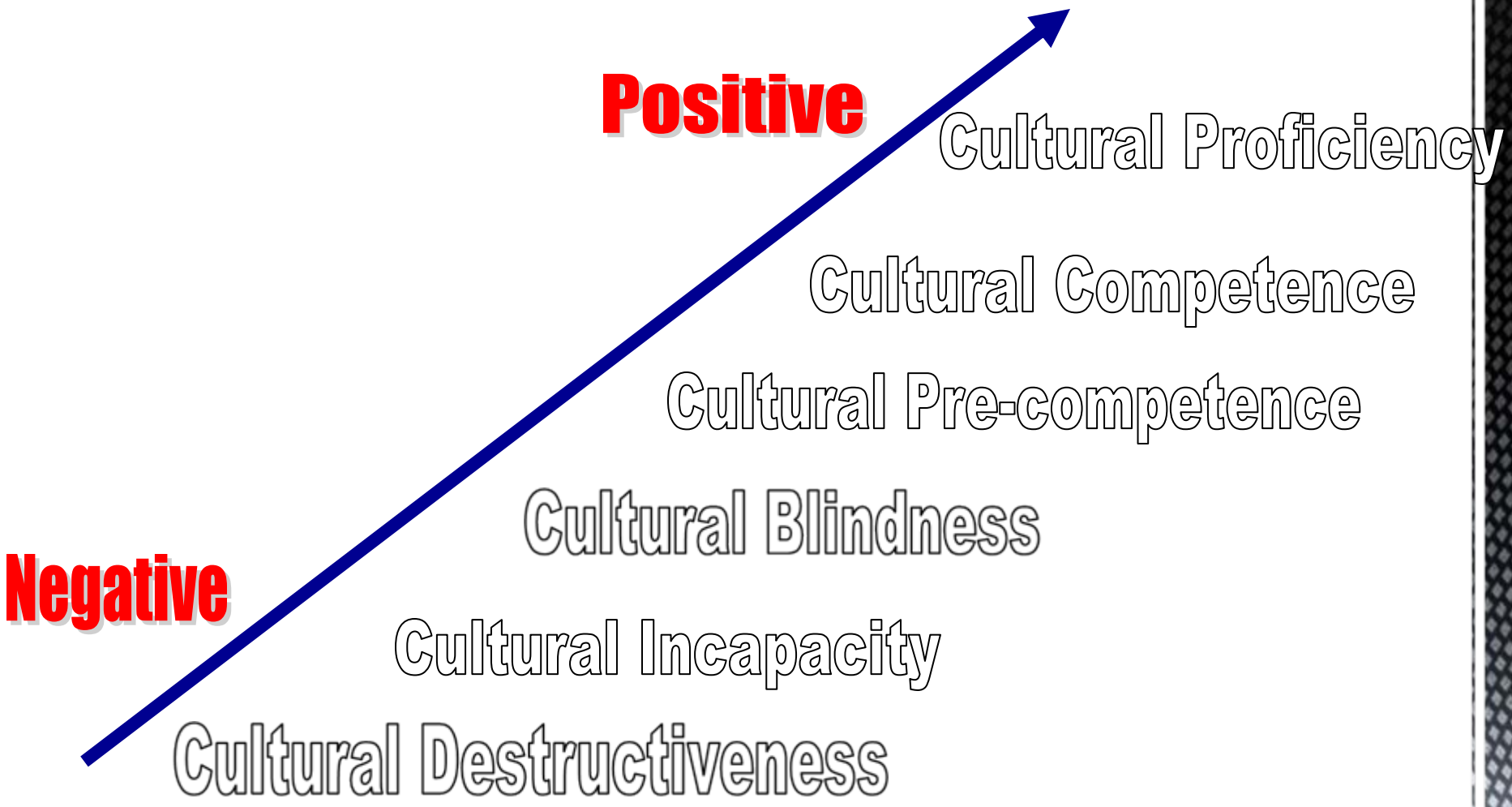
The quality of your data is at stake.

Cultural Diversity and Health Care

- Cultural Competence – Definition

The set of congruent *behaviors, practices, attitudes and policies* that enable effective health care in cross-cultural situations.

The Cultural Competence Continuum



Culturally sensitive approach to asking about a health problem

- What do you call your problem?
- What do you think caused your problem?
- Why do you think it started when it did?
- What does your sickness do to you? How does it work?
- How severe is it?
- How long do you think you will have it?

The LEARN Model
Berlin and Fowkes

Listen to the patient's perception of the problem

Explain your perception of the problem

Acknowledge and discuss differences/similarities

Recommend treatment

Negotiate treatment

Doing Cross-Cultural Questionnaire Translations

1. A professional fluent in both languages should translate the original questionnaire.

2. A different translator translates the new questionnaire back to the original version.

3. The translated and original versions are compared to ensure that they are identical in meaning.

Literacy as an Issue of Cultural Competency

- According to Healthy People 2010, health literacy is “the ability to obtain, process, and understand health information and services to make appropriate health decisions.”

- Improved consumer health literacy is a Healthy People 2020 Objective, which identifies it as an important component of health communication, medical product safety, and oral health

2003 National Assessment of Adult Literacy (NAAL)

45% of the United States population - 93 million Americans - have only basic or below basic literacy skills

What does this mean?

- The NAAL categorizes Below Basic as the ability to perform only the most **simple and concrete literacy skills** such as:
  - signing a form
  - adding amounts on a bank deposit slip
  - searching in a simple text to find out what a patient is allowed to drink before a medical test.

- The NAAL considers Basic skills as the ability to perform **simple and everyday literacy activities** such as:
  - using a TV guide to find out what programs are at a specific time
  - comparing ticket prices for two events
  - finding in a pamphlet how people are selected for the jury pool.

Basic Literacy Skills in PA

- In 2003 13% of the adult population in PA lacked BASIC Literacy Skills
- In Philadelphia county that number jumps to 22%

Effects of Low Health Literacy

According to the AHRQ Report, Literacy and Health Outcomes (January 2004), low health literacy is linked to higher rates of hospitalization and higher use of expensive emergency services.

- Among Type 2 diabetes patients inadequate health literacy is independently associated with worse glycemic control and higher rates of retinopathy.

- Among patients with hypertension or diabetes with inadequate functional health literacy had significantly less knowledge of their disease, important lifestyle modifications, and essential self-management skills, despite having attended formal education classes

Health Literacy Research – Local Perspective

- To assess health literacy in urban General Internal Medicine Clinic; African American patients over the age of 50.
- To help understand population and how development of tutorial on colonoscopy would be affected.
- Though we expected literacy levels to be low, we were surprised at results.

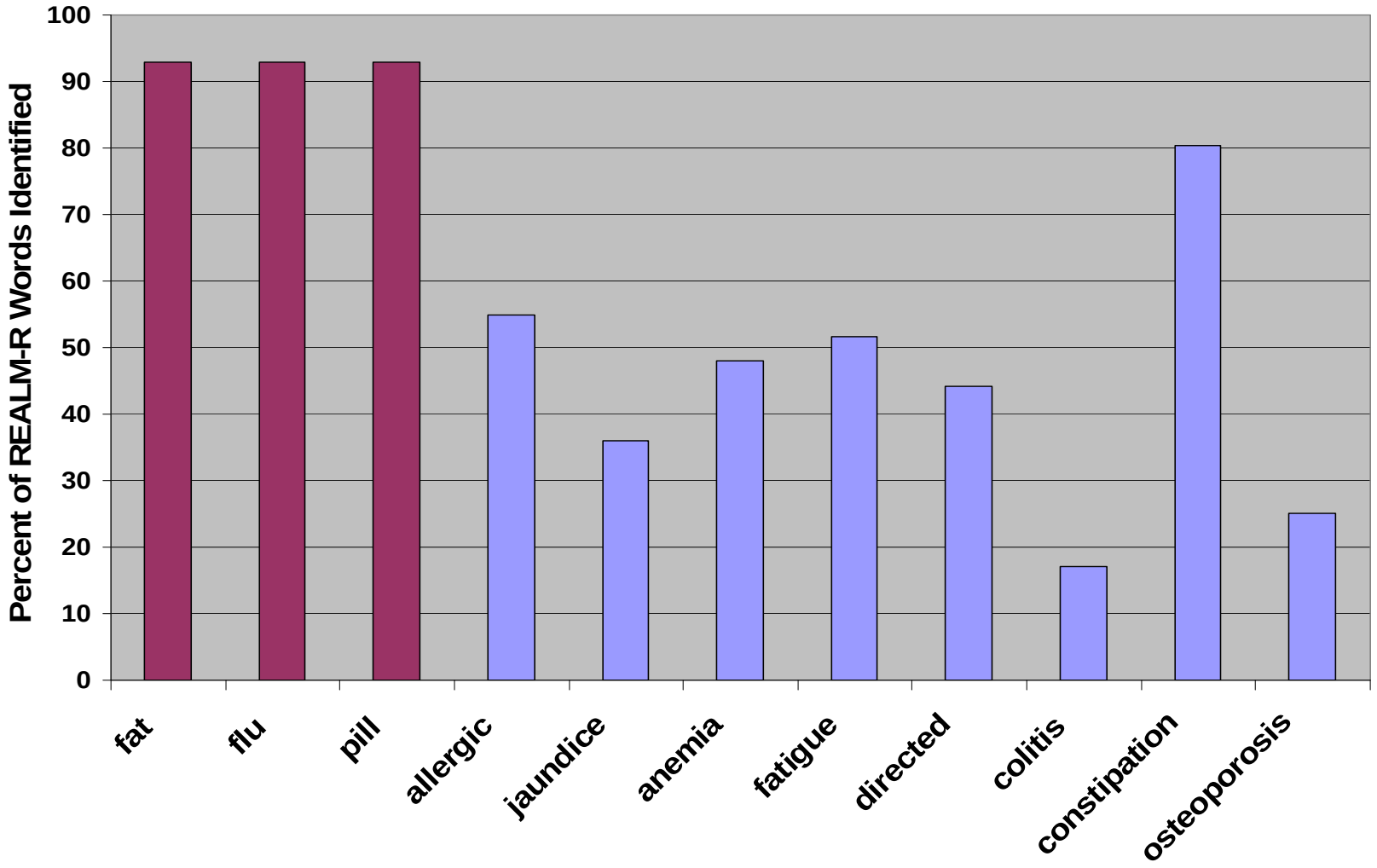
EDUCATION LEVEL AND LITERACY

- Although 52% of the patients reported having graduated from high school or higher, 90% scored literacy levels on the REALM-R below a 6th grade reading level.

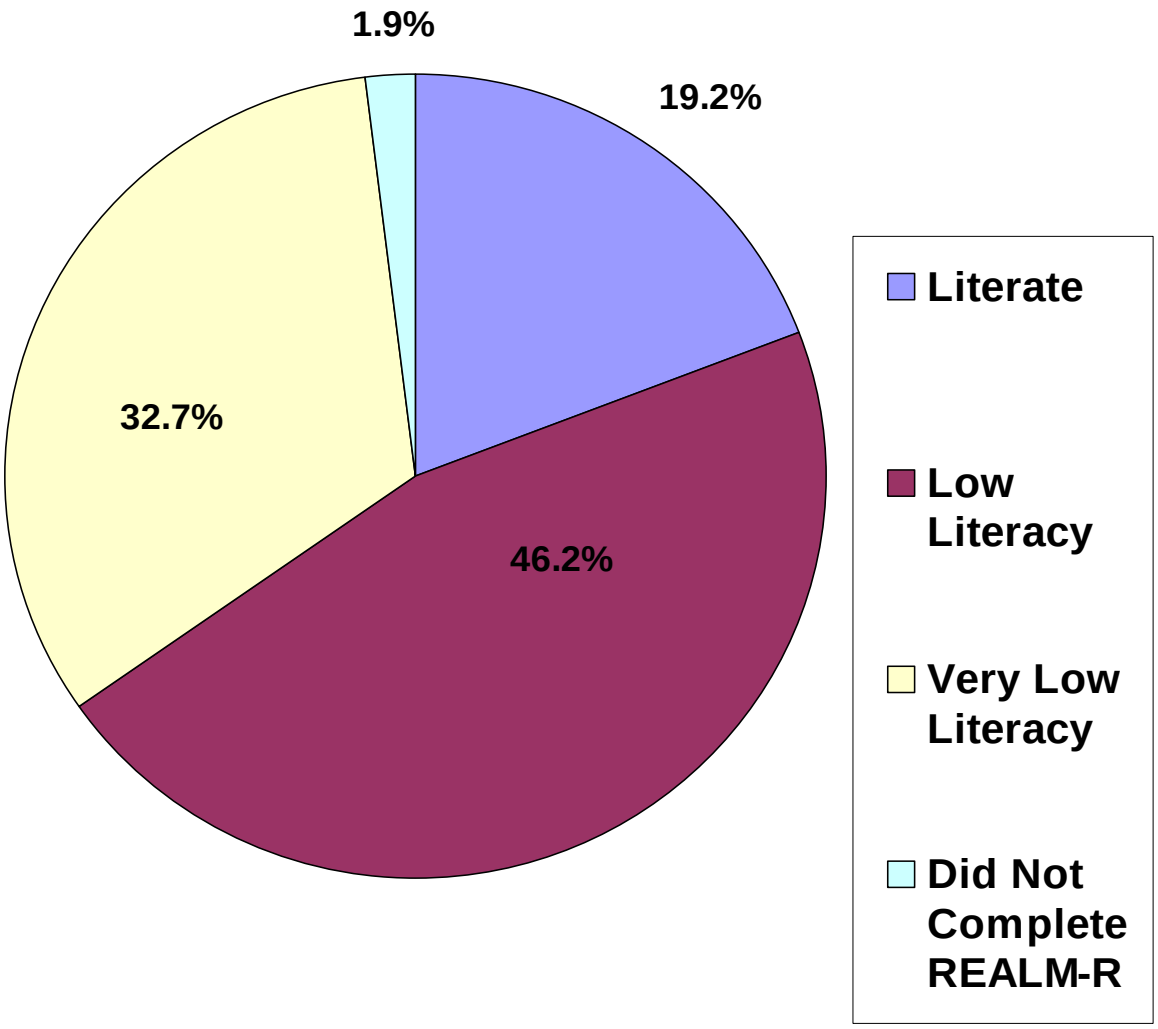
- Of these, 40% were unable to pronounce more than 3 out of 8 words on the REALM-R indicating very low literacy levels.

- Seven patients who completed the interview on perceptions of screening declined to complete the REALM–R citing not having their glasses or not being able to see the text, both common indicators of the inability to read.

Frequency of Identified Words



Percent by REALM-R Literacy Category



Sources/Resources For Online Surveys

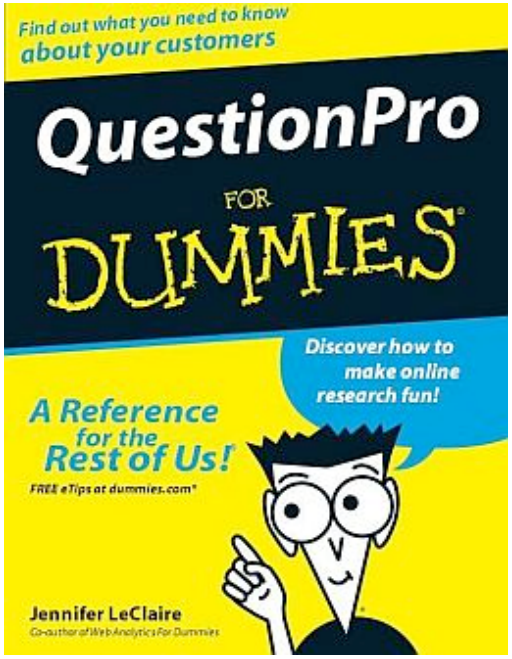
Survey Monkey:
http://www.surveymonkey.com/

Comparison of Online Survey Software:

http://
www.cloudsurfing.com/site/1570-Survey-Monkey/competitors/

Sources/Resources For Online Surveys

Question Pro: for online surveys
http://www.questionpro.com/resources/

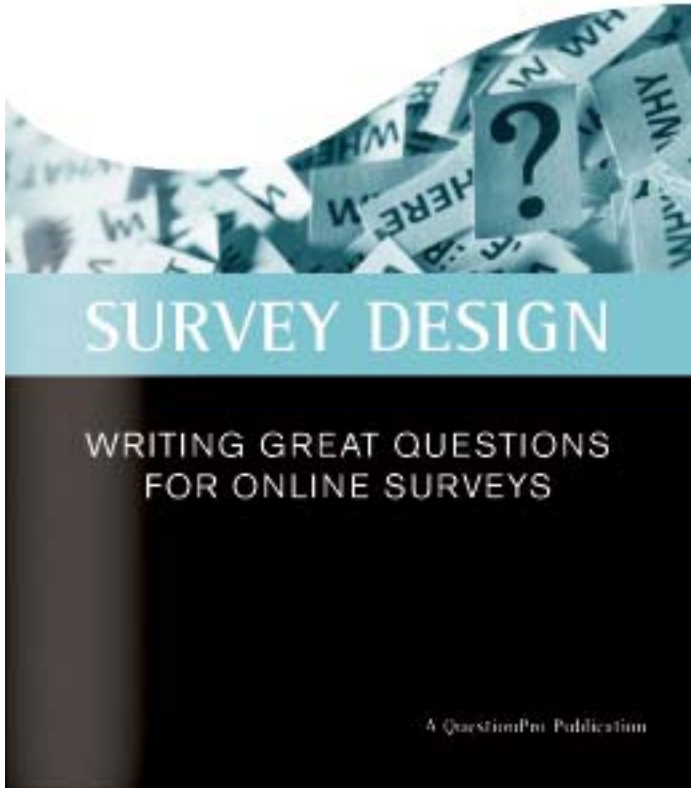


* Understand online surveys
* Select your target audience
* Prepare effective online questionnaires
* Track respondents
* Create multilingual surveys
* Send your survey to the masses

Tips For Online Surveys

- Keep it brief. Shorter surveys have higher completion
- Ask only relevant questions.
- If survey is long, provide pause to return options.
- Use simple, clearly stated, unbiased language.
- Label survey so it is clear what is being assessed.

More Tips



* Avoid loaded or leading words or questions
* Misplaced questions
* Mutually non-exclusive response categories
* Nonspecific questions
* Confusing or unfamiliar words
* Forcing answers
* Non-exhaustive listings
* Double barreled questions

Resources (Cont.)

9th Conference on Health Survey Research Methods (5/12/2010)

*www.**cdc**.gov/nchs/data/misc/proceedings_hsrm2010.pdf*

Resources (Cont.)

Research Instruments:

- Pain, Quality of Live; End of life; Survivorship: http://prc.coh.org/res_inst.asp

- AIDS, Condom use; Sexual Health: http://caps.ucsf.edu/research/survey-instruments/

- Misc Health Surveys (Rand Corp.): http://www.rand.org/health/surveys_tools.html

Resources (Cont.)

Systematic Reviews in Health-Related Areas:

Cochrane Systematic Review Group. Ottawa, Canada: Ottawa Health Research Institute:

http://www.thecochranelibrary.com/view/0/index.html

- CONTACT INFORMATION:

Anu Paranjape:
Anuradha.paranjape@temple.edu

Sarah Bass
sbass@temple.edu

Tom Gordon
tfgordon@temple.edu