



Cognitive Interviewing: A Method to Improve Instrument Development

Heather Becker, Ph.D.

The University of Texas, Austin

School of Nursing



Evidence of Response Error

- ✿ Record check studies
- ✿ Re-interview studies
- ✿ Studies of wording effects



Definition

- ✿ Cognitive interviewing enables us to explore how individuals understand, mentally process, and respond to what we present.
- ✿ Cognitive interviewing is the application of the Cognitive Aspects of Survey Methodology (CASM) research.
- ✿ Willis, G.B. *Cognitive Interviewing*, 2005, Sage.

Probe to Determine

- ❖ Is it difficult for interviewers to read questions in the same way to all?
- ❖ Do respondents have problems with instructions or explanations?
- ❖ Is the intent/meaning of the question clear?
- ❖ Do respondents have trouble remembering requested information?
- ❖ Are some questions too sensitive or produce biased answers?
- ❖ Are the response categories adequate?


Outcomes

- ✿ Item-specific recommendations for wording changes
- ✿ Clarification of intent of questions
- ✿ Problems with item or section sequence
- ✿ Problems with tool length or burden
- ✿ Limits on what a respondent can and will answer



Cognitive Interviewing Process

- ✿ Generally done before field testing to pretest items
- ✿ Often select respondents who have specific characteristics of interest
- ✿ Small number of respondents (5-25)
- ✿ Often done iteratively
- ✿ Informal analysis undertaken



Think-Aloud Interviewing

- ✿ Ask respondents to verbalize all thoughts about a survey question
- ✿ Enables researcher to understand the order in which respondents recall events and misunderstandings or difficulties in answering the questions




Verbal Probing

- ✿ Interviewer follows up initial response to “target question” with probes to elicit more specific information about answer.
- ✿ Verbal probing techniques can literally “probe” the cognitive processing system

Verbal Probe Examples

- ✿ What comes to mind when I ask you _____?
- ✿ Can you repeat the question in your own words?
- ✿ What does _____ (*ask about a specific term from the question*) mean to you?
- ✿ How sure are you that (*something*) happened? (i.e., to test recall).
- ✿ How did you arrive at that answer?
- ✿ What did you include in the answer?



How often do you or the person who shops for your food buy items labeled “low salt”?

- ✿ People said “yes”, but meant they buy foods they know are low salt, not necessarily by reading a label.
- ✿ Question asks about two different people, who may have different shopping habits.
- ✿ Not clear how to interpret a “seldom” response (rarely buy foods with sodium or rarely buy low sodium variety of foods).

References

- ✿ Aaimo, K., Olson, C., & Frongillo, E. (1999). Importance of cognitive testing for survey items: an example from food security questionnaires. *Journal of Nutrition Education*, 31(5), 269-275.
- ✿ Knafl, K., Deatrack, J., Gallo, A., Holcombe, G., Bakitas, M., Dixon, J., & Grey, M. (2007). The analysis and interpretation of cognitive interviews for instrument development. *Research in Nursing and Health*, 30(2), 224-234.
- ✿ Townsend, M., Sylva, K., Martin, A., Metz, D., & Wooten-Swanson, P. (2008). Improving readability of an evaluation tool for low-income clients using visual information processing theories. *Journal of Nutrition Education and Behavior*, 40(3), 181-186.
- ✿ Willis, G.B. (2005). *Cognitive Interviewing*, 2005, Thousand Oaks, CA: Sage.