Annotated Bibliography

Using Cognitive Interviews and Focus Groups to Pretest Structured Surveys

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Cognitive interviews are used widely during the pre-testing phase of questionnaires to detect items that are not understood by respondents as intended by the survey developers. Cognitive interview methods reflect a theoretical model of the survey response process involving four stages: comprehension or interpretation, information retrieval, judgment formation, and response editing. In other words, the respondent must understand the question, then recall information, then decide upon its relevance, and finally formulate an answer in the format provided by the interviewer. Cognitive interviews identify the types of errors made by respondents and help us understand how they interpret and answer questions. In studies of health disparities, cognitive interview pretesting can be critical to assessing the conceptual adequacy of new or adapted self-report measures across groups varying in socioeconomic status or race/ethnicity. Results can be used to revise or develop new items so that they are appropriate to respondents’ cultural context and lifestyle. These methods rely primarily on verbal probes about the interpretation of questions and recall strategies, which may be scripted or spontaneously created by the interviewer. Behavioral coding is another approach to identifying problems with items administered regardless of whether probes are used. Below we identify several key articles, books and book chapters that illustrate the use of these methods for pre-testing surveys. At the end, we review two sources of methods for using focus groups to pretest measures.

(1) USING COGNITIVE INTERVIEWS TO PRETEST MEASURES


This article describes the use of cognitive interviews to assess comprehension of nutrition survey items and nutrition intervention messages in low-income families in North Carolina. The sample included technical community college students; half were African American. The cognitive interviews identified problems with unclear instructions, confusing terms and response options, variable interpretations of terms, and misinterpretation of dietary recommendations. Results were used to clarify ambiguous instructions and terms, expand response options, and more clearly specify dietary recommendations to make the survey and intervention messages more suitable for use in low-income groups.


This article reviews methods used to assure that respondents are able to understand the questions being asked, that questions are understood in the same way by all respondents, and that respondents are willing and able to answer such questions. The paper describes some of the theories and tools used to test these assumptions in order to develop better survey instruments and questionnaires.


The authors performed 150 cognitive interviews to facilitate development of the CAHPS core survey questionnaire to obtain information on the experiences of health plan enrollees. The sample included low literacy adults, adults with chronic conditions, and Medicare recipients. The authors describe the process of conducting cognitive interviews and their role in survey development. Results pertain to: 1) using ratings versus reports when asking respondents to assess their experience; 2) the length of the reference time specific to the questions; and 3) ensuring respondents utilize the ‘not applicable’ response when appropriate in self-report surveys.

The authors performed behavioral coding of 345 interviews with African Americans, Mexican Americans, Puerto Ricans, and non-Latino Whites to identify question characteristics that might account for cultural variability in responses. Behavior coding involved the systematic coding of respondent and interviewer behaviors using a pre-determined coding scheme to identify problems with survey questions. The interview included standard questions from national surveys, e.g., the National Health Interview Survey and the Behavioral Risk Factor and Surveillance Survey. Minority group members were more likely to report comprehension problems.


This article illustrates the importance of cognitive testing in assessing the conceptual adequacy of new or adapted self-report measures across ethnic groups in studies of health disparities. The authors demonstrate use of complementary cognitive testing techniques, interaction analysis and behavior coding, to evaluate a survey administered to an ethnically diverse population. Forty-eight cognitive interviews were completed, including African Americans, Latinos (English and Spanish), and Whites. Results permitted identification of general and ethnic group specific problems with wording and concepts, revealed the nature of the problems, and enabled decisions to modify or drop items based on respondents’ comments.


The authors provide a detailed review of cognitive pre-testing including its history and development, supplemental techniques, experiments to test the usefulness of revisions made to surveys based on cognitive interview results, statistical modeling and different modes of data collection. The authors argue that the methods used to conduct cognitive testing influence the results, and thus developing optimal cognitive interviewing techniques is imperative. Directions for future research are explored in depth.


The STAT is a a self-report measure used for predicting the actions of lay people in response to stroke symptoms. The authors describe the use of cognitive interviewing techniques to develop a Spanish STAT and to examine the clarity, comprehension, and cultural relevance of both the Spanish version and the revised English STAT among Black and Latino respondents. This article demonstrates the importance of addressing the conceptual adequacy of adapted or translated measures when used among diverse groups. Cognitive interviews and probing techniques helped identify problematic items, highlighted potential errors in answering questions, and provided insight into item interpretation. Examination of the content of the interview resulting from the item responses from the scripted as well as open-ended cognitive probes revealed various potential sources of response error, associated with cultural background, language mastery, and/or education level. Inconsistencies in item interpretation across the two language versions were attributable to both socio-cultural differences and translation issues.

This article describes the use of cognitive interviewing to adapt measures for use in populations for whom they were not originally developed. Cognitive interviewing was used to adapt four instruments (the Audit of Diabetes Knowledge, the Insulin Management Diabetes Self-Efficacy Scale, and the Center for Epidemiological Studies-Depression Scale) for use with low-literate, Caribbean Spanish-speaking older adults with diabetes. Participants included Puerto Rican and Dominican adults aged 57-80 years; all had 5 years or less of schooling. Adaptations included developing interviewer administered versions of the instruments, translation into Spanish where necessary, modification of negatively worded items, and deletion of items not culturally relevant. Probes addressed the suitability of specific words used in items, the clarity of response options, and suggestions for alternate wording. Results of content analysis of the interviews were used to modify instructions and specific survey items for improved comprehension.


This article describes the use of cognitive interviewing to assess comprehension of existing Patient-Reported Outcomes Measurement Information System (PROMIS) items among Spanish-speaking Latinos living with HIV and refinement of items based on participant feedback. Problems with comprehension related mainly to the complexity of the words used. Cognitive interviews allowed for the identification of language that was easier to comprehend and identified the need for the inclusion of explanatory phrases to enhance item comprehension. Next steps will involve the use of quantitative methods to ensure measurement equivalence between the Spanish and English versions of the PROMIS item banks after collection of a large number of completed PROMIS items in Spanish and English.


The article reviews the theory of survey response and how differences in race/ethnicity lead to systematic measurement error in survey responses to standardized questionnaires. The authors performed cognitive testing on questions from several well established national health surveys in an ethnically diverse sample. The purposive sample of 423 adults included equal numbers of African Americans, Puerto Ricans, Mexican Americans, and non-Hispanic whites. They evaluated how race and ethnicity influenced respondents’ performance of the four cognitive tasks involved in responding to survey questions: question interpretation, information retrieval, judgment formation, and editing. Differences were found by race/ethnicity for several of the stages of question response, suggesting that more work is needed to develop surveys that are valid across racial and ethnic groups.


This book is a complete guide to using cognitive interviews to develop and refine questionnaires. The author explores the theory behind cognitive interviewing, specific techniques to conduct interviews including developing probes, training interviewers, recruitment of participants, and documenting and analyzing results. Other helpful sections include cognitive testing of sensitive questions and across age groups. An on-line manual is available: http://appliedresearch.cancer.gov/areas/cognitive/interview.pdf
(2) USING FOCUS GROUPS TO PRETEST EXISTING MEASURES

Focus groups (as well as cognitive interviews) can be used to determine the relevance and appropriateness of existing measures primarily developed in mainstream populations. When problems are identified, focus group transcripts can provide information that can help in modifying the measures.


The authors explain the importance of consulting members of target populations for content validation of existing measures in new populations. They examine the role of focus groups in the process of adapting measures for diverse populations. They describe how the focus groups led to the expansion and addition of constructs, the confirmation of existing items, and the identification of relevant quotes that could be used for new items. The appendices provide examples of detailed definitions of constructs and the focus group guide.


The authors provide recommendations for cross-cultural adaptations of survey instruments using examples from the Consumer Assessment of Health Plans Study (CAHPS®). Technical equivalence, equivalence in grammar and syntax, is distinguished from conceptual equivalence, absence of differences in meaning and content between two versions of an instrument. The authors propose a framework that comprises 3 activities: translation; qualitative analysis; and field test and analyses. Focus groups were used to investigate the appropriateness of the CAHPS® survey content for Spanish-speaking Latino patients enrolled in Medicaid.