

Cognitive testing for local community health survey

Introduction

Public health and healthcare institutions depend on Community Health Needs Assessments (CHNA) to plan programming for their communities.

The Health District of Northern Larimer County, Colorado has been conducting a phone or paper survey every three years since 1995 in order to help guide community programming (Health District of Northern Larimer County (HDNLC), n.d.). The health district has not had an opportunity to conduct cognitive testing or interviews on their most recent survey questions and they have concerns about specific questions included in the survey. The organization has a few questions that have been tweaked from an original, vetted form and they want to make sure the questions are still being interpreted correctly and are not causing a misidentification of the community health needs.

The health district has an increasing interest in access to care and social determinants. These could be valuable additions to the 2019 Community Health Survey. Updating the survey by adding new questions to address the changing needs and reflect recent research, and conducting interviews to evaluate the question integrity, would create a more valid and reliable data source as the health district moves forward.

Conducting cognitive interviews to evaluate question validity and reliability of field questions as well as existing questions will help create a reliable instrument to guide future programing.

Methods

Recruitment: Recruitment e-mails were sent to health district clients who had previously expressed interest in participating in focus groups.

Participants: Northern Larimer County residents. Three males, average age of 38 and six females with an average age of 55.

Procedures: Step-by-step procedures are reviewed in the Cognitive Testing Process Flow. In summary, the existing survey was reviewed to identify possibly invalid questions. The identified questions were reviewed and prioritized in order to identify five key focus areas. At this point, a sample survey was created and this sample survey was used to create interviewer instructions that included probing questions to address specific areas of interest for the survey questions. A practice interview was completed in order to identify additional areas of interest and an approximate time-frame for the completion of the cognitive testing interview. With this information, a recruitment email was disseminated and ten interviews were scheduled. Interviews were conducted and evaluated using Conrad's three-stage model.

Analysis Strategy: Interview responses were evaluated using Conrad's three-stage model. Errors in processing were categorized as one of three errors: 1. Understanding (misinterpret the question) 2. Performing the primary task (participant understands the intent of the question but cannot perform the task) and 3. Response Formatting (participant came up with an answer but then formatted the answer incorrectly within the choices provided).

Results

- Six questions had no participant errors and were validated for the Community Health Survey.
- Two questions had unique response formatting errors and were validated for the Community Health Survey.
- Question 3 was a researcher created barrier to care question and there were 6 response formatting errors. This question was deemed invalid due to a lack of time frame.
- Questions 4-6 were the Physical Activity Questions and each had a wide range of comprehension errors. The majority of these errors were in reference to the time frame of the IPAQ based question or inaccurately categorizing an exercise.
- Questions 8-9 were Subjective Social Status questions. Interview results indicated lack of understanding the question and the need for more defined parameters.

Conclusion

Summary of Findings: The Physical Activity Questions were confirmed as unreliable constructs. Possible solutions include adding more physiological references to the question explanation, reformatting the answer boxes, or converting the question to a yes or no question.

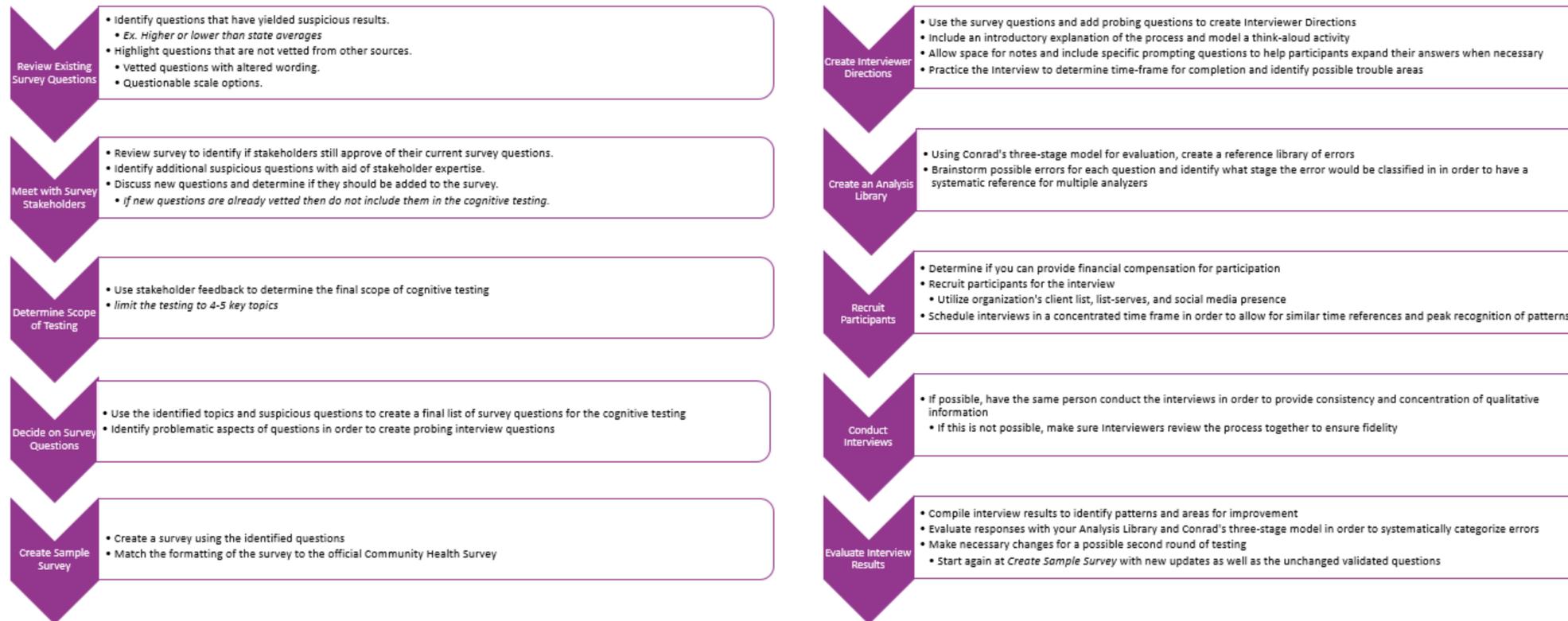
The barrier to care question was field tested in order to summarize multiple questions from the survey. The researcher does not recommend including this question in future surveys.

The subjective social status survey question confirmed research indicating it was a valid socioeconomic status indicator. The question can be refined by including a definition for "community" in order to clarify question parameters.

Evaluation of Project: There was selection bias in the process used to recruit participants. Participants were clients of a program that connects people to health insurance. This likely swayed the *Access to Care* questions included in the cognitive testing. Additionally, there was only one round of interviews completed and proposed solutions were not put through a new round of cognitive testing.

Future Project Recommendations: Conrad's three-stage model is a subjective frame of reference. A future project that identifies common errors and classifies them among Conrad's three-stages would be a beneficial reference point for future cognitive testing.

Cognitive Testing Process Flow



Conrad F, Blair J: From impressions to data: increasing the objectivity of cognitive interviews. In Proceedings of the Survey Research Methods Section of the American Statistical Association: 4 August 1996; Alexandria, VA American Statistical Association; 1996:1-10.

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The cognitive interviews were made possible by The Health District of Northern Larimer County. The Health District provided the existing Community Health Survey, provided guidance, and a location for hosting the cognitive interviews.