Using Close-Ended Web Probes to Inform the Redesign of the National Health Interview Survey (NHIS)

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Presentation Overview

- 1. Web Probing and Cognitive Interviews
- 2. The NCHS Research and Development Survey (RANDS)
- 3. NHIS Chronic Lung Condition Questions
- 4. Methodological Considerations for Using Close-Ended Web Probes



Web Probing and Cognitive Interviewing

- The goal of question evaluation studies is to reduce the potential measurement error of survey items.
- Traditional method is Cognitive Interviewing
 - Purposive sampling
 - Semi-structured interviews
 - Qualitative data and analysis
- Newer method is Web Probing
 - Wide range of samples—from convenience to representative
 - Structured interviews*
 - Quantitative and qualitative analysis*



Web Probing and Cognitive Interviewing

	Traditional CI	Web Probing
Sample	Narrow Geographic & Demographic Dispersion	Wide Geographic & Demographic Dispersion
Goals	Explore and Evaluate	Explore and Evaluate or Confirm
Probes	Scripted or Reactive / Spontaneous	Scripted
Add'l Info	Personal Narratives Context	Response Distributions Paradata

From Edgar and Scanlon, 2017 "Apples and Oranges: What is the right question when comparing Web Probing and Cognitive Interviewing?" AAPOR



Close-Ended Web Probing

- Close-ended web probes provide a way to mix qualitative and quantitative findings
 - Use findings from Cognitive Interviews to design probes
 - Answer categories are patterns of response
 - Embedded into questionnaire following question or questions under evaluation
 - Findings can be analyzed alongside other quantitative variables
- Probes are designed around the patterns of interpretation found during cognitive interviews



Example of a Close-Ended Web Probe...

NHIS Question: Would you say your health in general is excellent, very good, good, fair, or poor?

Probe Question: When you answered the previous question about your health, what did you think of?

- 1. My diet and nutrition
- 2. My exercise habits
- 3. My smoking or drinking habits
- 4. My health problems or conditions
- 5. The amount of times I seek health care
- 6. The amount of pain or fatigue I have
- 7. My conversations with my doctor



NCHS' Research and Development Survey (RANDS)

- Non-production survey designed to examine the potential uses of web panels
- Used Gallup Panel
 - "Representative", Recruited, Statistically-sampled
- Conducted over two rounds in 2015 and 2016
 - Second round included close-ended web probes
- n=4784 (Round 1=2304; Round 2=2480)
- Only web respondents
 - Panel itself includes non-web panelists, but they were not included in this survey



- Currently NHIS asks three separate questions about chronic pulmonary disease
 - Emphysema ever
 - COPD ever
 - Chronic Bronchitis in last 12 months



Current NHIS Scheme

Have you ever been told by a doctor or other health professional that you had emphysema?

- 1. Yes
- 2. No

Have you ever been told by a doctor or other health professional that you had chronic obstructive pulmonary disease, also called COPD?

- 1. Yes
- 2. No

During the past 12 months, have you been told by a doctor or other health professional that you had chronic bronchitis?

- 1. Yes
- 2. No



- Currently NHIS asks three separate questions about chronic pulmonary disease
 - Emphysema ever
 - COPD ever
 - Chronic Bronchitis in last 12 months
- Cognitive interviewing revealed large potential for measurement error
 - COPD INCLUDES emphysema and chronic bronchitis!
 - Counting acute bronchitis in chronic question
- A "combined" question was suggested and tested on RANDS



Have you ever been told by a doctor or other medical professional that you have Chronic Obstructive Pulmonary Disease or COPD, emphysema, or chronic bronchitis?

- 1. Yes
- 2. No
- [9] Refused



- Currently NHIS asks three separate questions about chronic pulmonary disease
 - Emphysema ever
 - COPD ever
 - Chronic Bronchitis in last 12 months
- Cognitive interviewing revealed large potential for measurement error
 - COPD INCLUDES emphysema and chronic bronchitis!
 - Counting acute bronchitis in chronic question
- A "combined" question was suggested and tested on RANDS
 - Wanted to find a question that captured the same construct, but with a lower potential for measurement error



Does the combined question capture the same constructs as the separate questions do?



Findings from Cognitive Interviewing

EPHEV and COPDEV: Ever been told...

Emphysema/COPD

Emphysema/COPD

Constructs Captured

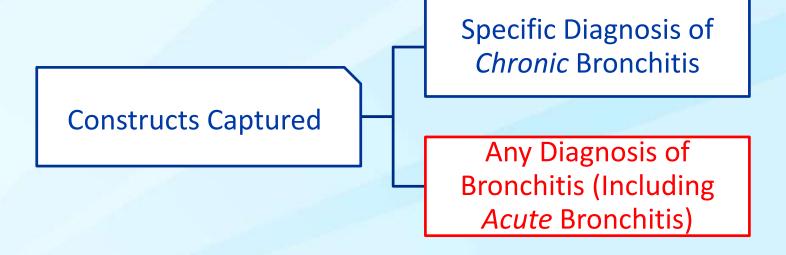
General Chronic Lung Disease

Heart Disease



Findings from Cognitive Interviewing

CBRCHYR: In the past 12 months...chronic broncitis?





Findings from Cognitive Interviewing

Combined Question: Ever been told...

COPD, emphysema or chronic bronchitis?

COPD/Emphysema/Chronic Bronchitis

General Chronic Lung
Disease

Constructs Captured

Acute Bronchitis

Heart Disease



Findings from Web Probing

- Probes were administered after combined question (NEWLUNG) in Round 2 of RANDS
- Only respondents who answered NEWLUNG "yes" received probes
- Probes designed to tease out specific condition respondents were thinking about (and see if acute issue was present or not)



Which condition were you told you had? [Select All]

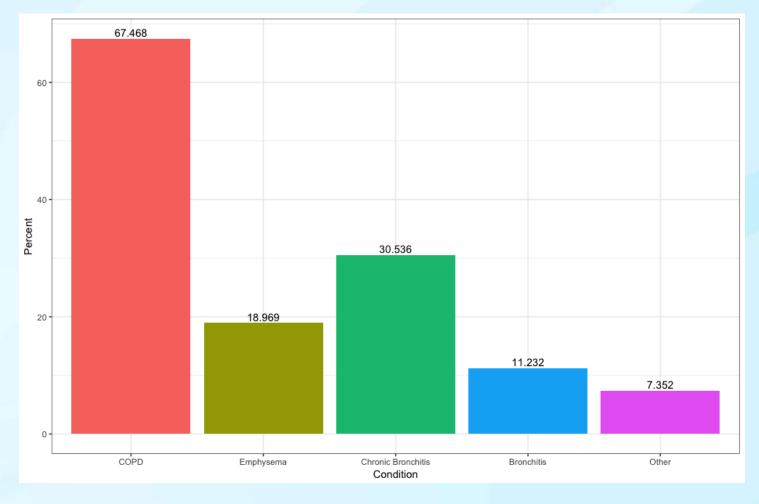
- 1. COPD
- 2. Emphysema
- 3. Chronic Bronchitis
- 4. Bronchitis
- 5. Something else

Thinking about the most recent time you had symptoms of Chronic Obstructive Pulmonary Disease or COPD, emphysema, or chronic bronchitis, how long did the symptoms last?

- 1. Less than one week
- 2. One week to one month
- 3. One month to three months
- 4. Three or more months

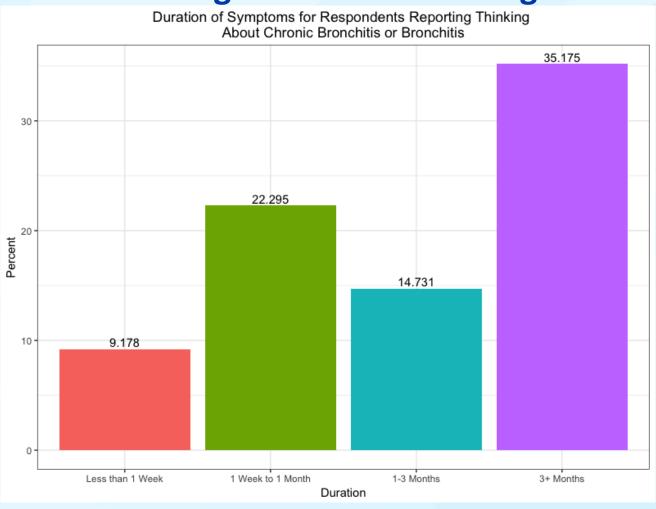


Findings from Web Probing





Findings from Web Probing





Does the combined question capture the same constructs as the separate questions do?

- Cognitive Interviews indicate that combined question
 - Does pick up the intended, in-scope constructs
 - Does not appear to capture out-of-scope "heart disease" or "acute bronchitis" constructs
- Web probing used to see if this latter is just a function of the cognitive interviewing sample
 - Only small percent of respondents use a potentially out-of-scope interpretation

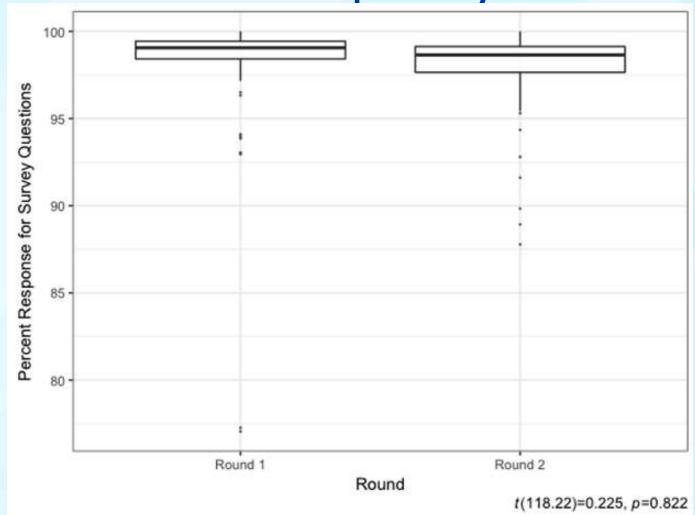


Methodological Considerations for the Use of Web Probes

- One of the perceived drawbacks of adding cognitive probes to field tests is the idea that they will effect the performance of other survey items.
- By evaluating the response between Rounds 1 (without probes) and 2 (with probes) of RANDS, we find no evidence of this.
- Explored two areas:
 - 1. Probes' effects on overall response
 - 2. Probes' effects on response to other survey items

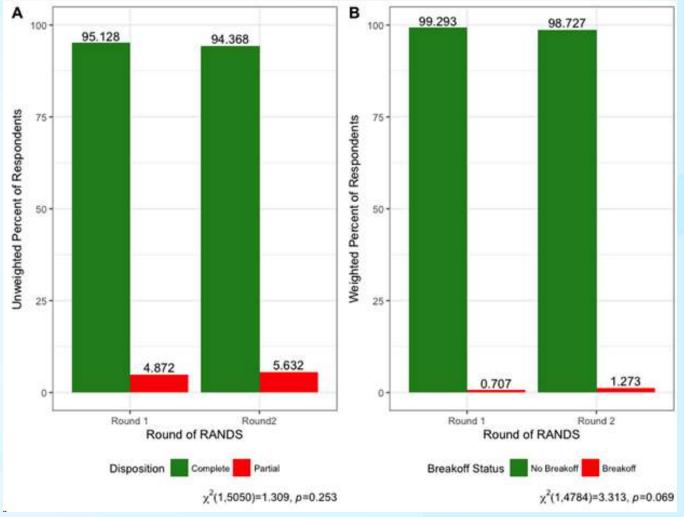


Methodological Considerations for the Use of Web Probes: Overall Item Response by Round





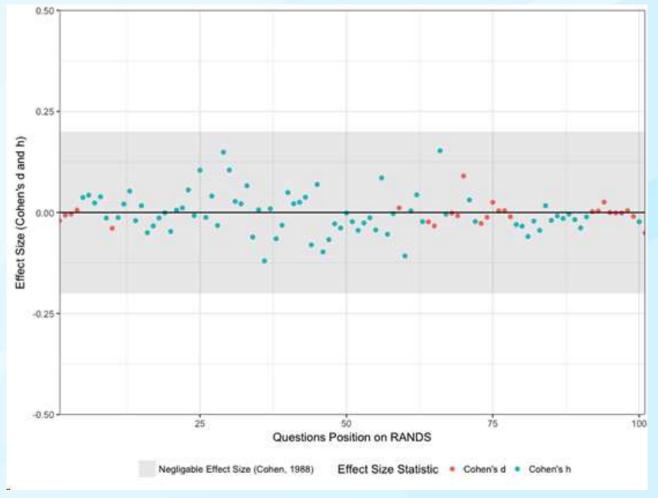
Methodological Considerations for the Use of Web Probes: Completion and Breakoffs by Round







Methodological Considerations for the Use of Web Probes: Effects on Response to Other Items





Thank you!

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