Survey Design and Tools Part II

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Agenda – Part II

• Create or Use Validated Survey
• Developing Surveys
• Designing & Formatting Surveys
• Distribution Methods
• Response Rates
• Data Analysis
• Regulatory and Contracting
Deciding to Use a Validated Survey or Create Your Own

Validated vs. De Novo Surveys

Creating, testing, validating a survey is a significant effort requiring substantial investment

• Is it reliable?
  – Does it repeatedly measure the same property/effect and get the same result?

• Is it valid?
  – Does it measure the property that is suppose to be measured
Create or Use Validate Survey:

Validated Surveys

- Are you measuring an attitude, concept or behavior?
  - Likely a validated survey exists

Avoid re-inventing the wheel...

It’s hard work, and difficult to get right.
Finding and Using Validated Surveys:

Validated Surveys

Finding the instrument that accurately and reliably measures the concept of interest can be difficult, but there are resources...
Finding and Using Validated Surveys:

REDCap Shared Library

• Database with hundreds of curated, validated instruments including surveys
• Curated for relevance, accuracy in function and coding, and copyright issues
Finding and Using Validated Surveys:
REDCap Shared Library

Keyword search: SF
Search the library

Found 9 results matching your search

<table>
<thead>
<tr>
<th>Title</th>
<th>Downloads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Sclerosis Quality of Life (MSQOL-54) ★</td>
<td>47</td>
</tr>
<tr>
<td>PROMIS Parent Proxy SF v1.1 - Anxiety - Short Form 8b ★</td>
<td>15</td>
</tr>
<tr>
<td>PROMIS Parent Proxy SF v1.1 - Depressive Symptoms - Short Form 8b ★</td>
<td>8</td>
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<tr>
<td>PROMIS Pediatric SF v1.1 - Anxiety - Short Form 8b ★</td>
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<td>PROMIS Pediatric SF v1.1 - Depressive Symptoms - Short Form 8b ★</td>
<td>5</td>
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<td>PROMIS SF v.1.0 - Intensidad del Dolor - Cuestionario Abreviado 3a ★</td>
<td>2</td>
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<td>PROMIS SF v1.0 - Physical Function - Short Form 12a ★</td>
<td>16</td>
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<td>PROMIS SF v1.0-1.1 Global ★</td>
<td>151</td>
</tr>
<tr>
<td>Rand 36 Item SF Health Survey Instrument (Version 1.0) ★</td>
<td>1096</td>
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</table>

★ Indicates a REDLOC curated instrument

Didn't find what you were looking for? Suggest a validated instrument for library inclusion.
Finding and Using Validated Surveys:
REDCap Shared Library

This page allows you to build and customize your data collection instruments one field at a time. You may add new fields or edit existing ones. New fields may be added by clicking the Add Field buttons. You can begin editing an existing field by clicking on the Edit icon. If you decide that you do not want to keep a field, you can simply delete it by clicking on the Delete icon. To reorder the fields, simply drag and drop a field to a different position within the form below. NOTE: While in development status, all field changes will take effect immediately in real time.

Current instrument: Rand 36 Item SF Health Survey Instrument (Version 1.0)
Finding and Using Validated Surveys:
Other Resources

• PROMIS (http://www.nihpromis.org/)
  – Patient Reported Outcomes Measurement Information System (PROMIS), is a system of highly reliable, valid, flexible, precise, and responsive assessment tools that measure patient–reported health status.

• National Cancer Institute
DEVELOPING SURVEYS
Preparing to Do A Survey:

• **Who** are you going to survey?
• **How** are you going to survey them?
• **What** are you going to ask them?

What Could Possibly Go Wrong?

• **Who:** Coverage Error, Sampling Error, Non-response Error
• **How:** Method Effect
• **What:** Measurement Error

*Engage a statistician and/or survey design expert early!*
Developing a Survey:

Question Writing Tips

• Write at a 6th grade level.
• Use complete sentences.
• Use as few words as possible.
• Define your terms.
• Never make the first questions open-ended, difficult, embarrassing or directly about themselves.
• Avoid complicated skip patterns in mail surveys.
• Make sure the question requires an answer. Questions beginning with “If” or “When” often don’t.
Developing Surveys:

Wording Practices to Avoid

• Shorthand
  – Contractions, abbreviations, symbols, slashes, parenthesis, brackets
• Framing questions in the negative
• Using double negatives
• Passive voice
• Words or phrases that express a strong point of view
Developing Surveys:
Wording Practices to Avoid

• Questions using leading, emotional or evocative language
• Technical terms and jargon
• ‘Double-barreled’ questions or responses
  – Using ‘and’ in a question or response
• Questions with multiple response dimensions
  – Asking about frequency and occurrence in single question
## Developing Surveys: Question Wording

### Keep It Simple!

<table>
<thead>
<tr>
<th>Use</th>
<th>Instead of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work</td>
<td>Employment</td>
</tr>
<tr>
<td>Tired</td>
<td>Exhausted</td>
</tr>
<tr>
<td>About</td>
<td>Regarding</td>
</tr>
<tr>
<td>People who live here</td>
<td>Occupants of this household</td>
</tr>
<tr>
<td>Job concerns</td>
<td>Work-related employment issues</td>
</tr>
<tr>
<td>Providing health care</td>
<td>Health care provision</td>
</tr>
<tr>
<td>Your answers</td>
<td>Your responses to this questionnaire</td>
</tr>
</tbody>
</table>
Developing Surveys:

Question Types

• Open-ended vs. Closed Questions
  – Respondents more likely to skip open-ended
  – Open-ended
    • Greatest variety of responses
    • Time consuming to respond and analyze
  – Closed
    • Ensure that respondents interpret questions the same way
    • Response options should be mutually exclusive & exhaustive
Developing Surveys:

Question Types

• Rating scales
  – Usually between 5 and 7 points
  – Provide a rating scale
  – Write questions so that both positive and negative items are scored high and low
    • Agree/Disagree scales biased to ‘Positivity bias’
    • Order of response categories can influence answer choices
Developing Surveys: Visual Layout

• Keep design clean, simple and consistent
  – Clearly distinguish question text from answer choices and instructions
  – For open-ended questions provide lines
  – Limit the number of variations of font formats
    – Consider population (age, reading level, diagnoses that may impact reading comprehension/ability)
  – Make use of white space
Developing Surveys:

Visual Layout

• First and last impressions are created by the front and back cover/pages
  – Remember to include instructions about return of completed survey
  – Thank your participants for their time!

• Check for spelling and grammatical errors, readability and flow, visual consistency

• Test your survey on a variety of people!
DISTRIBUTION METHODS
**Distribution Methods:**

**Types**

- Distribution Methods
  - Mailed
  - Web
  - Mobile
  - Phone
  - In person
  - Mixed

*Depends on Population!*
## Distribution Methods:

### Factors to consider[1]

<table>
<thead>
<tr>
<th>Factor</th>
<th>In Person</th>
<th>Phone</th>
<th>Mail</th>
<th>Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>Costly</td>
<td>Moderate</td>
<td>Cheap</td>
<td>Cheapest</td>
</tr>
<tr>
<td>Speed</td>
<td>Slow</td>
<td>Fast</td>
<td>Moderate</td>
<td>Fastest</td>
</tr>
<tr>
<td>Response rate</td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
<td>Low to Moderate</td>
</tr>
<tr>
<td>Sampling need</td>
<td>Address</td>
<td>Phone #</td>
<td>Address</td>
<td>Email</td>
</tr>
<tr>
<td>Respondent burden</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Researcher control</td>
<td>Variable</td>
<td>Variable</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Length of survey</td>
<td>Long</td>
<td>Moderate</td>
<td>Short</td>
<td>Short</td>
</tr>
<tr>
<td>Social desirability</td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Length of response options</td>
<td>Short to moderate</td>
<td>Moderate</td>
<td>Short</td>
<td>Moderate</td>
</tr>
<tr>
<td>Survey complexity</td>
<td>High</td>
<td>Good</td>
<td>Poor</td>
<td>High</td>
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<tr>
<td>Chance of interviewer bias</td>
<td>High</td>
<td>Moderate</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Distribution Methods:

Online Surveys

**Strengths**

- Eliminates need for data entry
- Adaptive – show only relevant questions
- Cost
- Questions with long list of possible responses
- Respondents more willing to disclose private and socially undesirable information
- Ability to require response
  - Provide option for ‘Unknown’/’Don’t know’

**Challenges**

- Limits ability to verify accuracy and account for missing data
- Skewed to internet users (some may not possess skillset)
- How and when participants read email
- Spam filters – delivery schedule
Distribution Methods:
Maximize Rewards & Trust

• Respect the respondent: tell why the research is being done, provide a toll-free number for questions, say thanks.

• Ask for advice: we need your feedback, we need information only you can provide.

• Offer a financial or tangible reward (even a token) in advance of their completing the survey.

• Make project seem important, prominent. Emphasize legitimating sponsorships or affiliations.
Distribution Methods:

Minimize Costs

• Don’t embarrass the respondent—don’t use complicated language or phrases they might not understand.

• Minimize inconvenience to the respondent – keep it short, don’t include too many complex questions.

• Ask for personal information only when necessary; if necessary, soften the request. Make sure respondent understands why it is important.
RESPONSE RATE
Response Rate:
Overview

• Overall declining response rates in the past 3 decades
• Reasons for non-responses\[2,7]\n  – Failure to deliver questions to target audience
  – Mistrust of confidentiality
  – Over-surveying fatigue
  – Insufficient postage
  – No return postage provided
  – Incorrect mailing address
  – Unclear survey instructions
  – Interception and disposal by family/other
  – Insufficient incentive/payment

**Response Rate:**

By Distribution Methods

<table>
<thead>
<tr>
<th>Method/Industry</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean (% Returned)</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail</td>
<td>309</td>
<td>19.7</td>
<td>94.0</td>
<td>44.7</td>
<td>21.8</td>
</tr>
<tr>
<td>In person/ drop in</td>
<td>31</td>
<td>30.0</td>
<td>83.0</td>
<td>62.4</td>
<td>16.9</td>
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<tr>
<td>Email</td>
<td>11</td>
<td>23.7</td>
<td>89.0</td>
<td>54.7</td>
<td>23.9</td>
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<tr>
<td>Phone</td>
<td>10</td>
<td>10.0</td>
<td>86.2</td>
<td>49.1</td>
<td>24.1</td>
</tr>
<tr>
<td>Web</td>
<td>6</td>
<td>10.6</td>
<td>69.5</td>
<td>38.9</td>
<td>15.1</td>
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<tr>
<td>Health care</td>
<td>21</td>
<td>17.4</td>
<td>94.0</td>
<td>53.8</td>
<td>20.0</td>
</tr>
<tr>
<td>Education</td>
<td>15</td>
<td>10.0</td>
<td>84.0</td>
<td>49.0</td>
<td>24.1</td>
</tr>
</tbody>
</table>

**Response Rate:**

**By Distribution Methods – Rates**

- **Study 1**[^3]
  - Phone – 64%
  - Mail w/ follow-up telephone – 56%
  - Mail w/ follow-up letter – 49%
  - Incomplete – 44%

- **Study 2**[^4]
  - Phone – 30%
  - Mail – 18%
  - Online – 7%

- **Study 3**[^5]
  - Mail – 32%
  - Online – 21%


Response Rate:

Facilitation & Follow-up

• Pre-notification
• Publicity
• Reminders
  – Give window of 7 to 10 days before following-up
• Advice respondents of a deadline
• Planning on resurveying the same population?
  – Thank for participation
  – Share some of your findings
  – Survey feedback?
• Follow-up methods include:
  – Email
  – Phone
  – Mailed postcard
Response Rate: Increasing Contact[6]

% Response

- No Reminder: 56%
- 1 Reminder: 25%
- 2 Reminders: 12%
- 3 Reminders: 6%
- 4 Reminders: 1%

DATA ANALYSIS
Data Analysis:

Coding Data

- Checks to find errors in coding or data entry
- Weighting of questions
- Conversion of responses to numerical values
- Coding open-ended questions
  - Abstraction and coding
- Repeated surveys – analyzing absolute or percent change between periods, overall, etc.?
- Consideration of time of year survey administered
Data Analysis:

Analyzing Data

• Incomplete surveys and missing data
• Conduct and report non-response bias tests
  – Archival analysis
  – Wave analysis
  – Interest-level analysis
  – Active non-response analysis
REGULATORY & CONTRACTING
Regulatory & Contracting: Considerations

- **Protocol** – includes description of participant recruitment, data types, survey tools, individually identifiable data, measures to protect confidentiality

- **Informed Consent vs. Information Sheet**
For studies where researchers want to use an online survey to individuals that have not signed a consent form:

- **Consent/Authorization** – IRB approved *Waiver of Authorization*; Consent as first page of online survey or part of recruitment materials

<table>
<thead>
<tr>
<th></th>
<th>REDCap</th>
<th>Survey Monkey</th>
<th>Survey Gizmo</th>
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<tbody>
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<td>Business Associates Agreement</td>
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<td>X</td>
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<tr>
<td>Required</td>
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<tr>
<td>Accounting of Disclosures</td>
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<td>X</td>
</tr>
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