Survey Research

Amy S. Lightstone, MPH, MA
Health Assessment Unit
Office of Health Assessment and Epidemiology
Objectives

- Define survey research and why survey research is conducted
- List at least 3 methods of conducting survey research
- Describe at least 3 limitations of survey research
What Is A Survey?

- Commonly used method of collecting information about a population of interest

- Gathering information from a sample of individuals in order to learn something about the larger population from which it was drawn
Why Conduct a Survey?
Considerations

- What data is already available?
- Can the required information even be collected in a survey?
- What are the data collection goals?
  - What do you need and from whom?
- Are the results to be descriptive, causal, or relational?
Why Conduct a Survey?
Additional Considerations

- Want timely & accurate data

- Provide benchmarks or make comparisons?

- Prioritize actions based on data?
What Is Involved in Conducting a Survey?

- Set objectives for the information collected
- Determine the research design
- Prepare a reliable & valid data collection instrument
- Administer & score the instrument
- Analyze the data
- Report the results
How To Conduct a Survey: Components

- Survey Design
- Sample & Sampling
- Modes/Types of Surveys
- Questionnaire Design
- Limitations
- Logistics
- Ethical Considerations
Survey Design

- Cross sectional
- Longitudinal
- Successive independent samples
- Test-retest
- Case-control
Sample & Sampling

- **Target Population** – who want to generalize to
- **Study Population** – what population can you get access to
- **Sampling Frame** – how gain access to them (what source used)
- **Sample** – who is in your study
Sampling Frame

- **Probability Sampling**
  - Examples: Simple Random Sample, Stratified Random Sample, Cluster (Area) Sample

- **Non-Probability Sampling**
  - Convenience Sample (Haphazard), Purposive Sample (Snowball, Quota)
Sample & Sampling: Goal

In a properly designed sample, all units in the target population have a known measurable, non-zero chance of selection or being included in the sample, so results can reliably be projected to the population.
Modes/Types of Surveys: Mail

**Pros**
- Relatively inexpensive
- Respondent completes when convenient
- Can include pictures

**Cons**
- Survey must be short & simple
- Literacy & education levels
- Languages
Modes/Types of Surveys: Phone

**Pros**
- Can dial random numbers
- Complex survey & skip patterns
- Data entered as survey completed

**Cons**
- Oversaturation of calls, caller ID
- Response rates historically have declined
- More cell-only households, cost & logistics
Percentages of adults and children living in households with only wireless telephone service or no telephone service: United States, 2003–2012

NOTE: Adults are aged 18 and over; children are under age 18.
DATA SOURCE: CDC/NCHS, National Health Interview Survey.

Modes/Types of Surveys: In-Person

**Pros**
- Longer interviews
- More detailed information, can probe
- Flexibility

**Cons**
- Very costly
- Very experienced interviewers
- Logistics of finding/obtaining sample
Modes/Types of Surveys: Internet

Pros

- Complex survey & skip patterns
- Data entered as survey completed
- Cost
- Show pictures

Cons

- Internet not universal
- Not representative of population, may not know who
- Quit in process of questionnaire, not as likely if talking
- Logistics of finding/obtaining sample
Percent of Adults (18+ yrs) Who Access the Internet in a Typical Week, LACHS 2002-2011

- 2002: 56.0%
- 2003: 60.5%
- 2004: 66.5%
- 2007: 66.5%
- 2010: 70.6%
Questionnaire Design

- Keep in mind:
  - Analysis plan
  - How are you going to use data
  - What are the data collection goals
  - What do you need and from whom
Questionnaire Design

- Draft Questionnaire
  - Content
  - Wording
  - Response format
  - Order/sequence

- Programming & Training
- Pre-Test
- Edit & Revise
Questionnaire Design: Goals

- Clear & concise
- Unambiguous
- Well-defined concepts
- Distinct phraseology
- Length
- Order
Drafting Questionnaire: Considerations

- What types of questions (open/closed-ended)
- How complex will questions be
- Will lengthy questions be asked
- Will screening questions be needed
- Will long response scales be used
- Can sequence be controlled
Drafting Questionnaire: Considerations

- Can respondent be expected to know about the issue
- Will respondent need to consult records
- What is respondents literacy/reading level
- Visuals needed
- Standardized/validated question
- Can compare over time or across groups
Questionnaire Design: Examples

- Double-barreled

- Do you buy frozen meat and frozen fish?
Questionnaire Design: Examples

Biased or Loaded

What do you see as the advantages of eliminating welfare?
Questionnaire Design: Examples

- Screener or filter question needed

- Do you think the TV show Grey’s Anatomy shows too much blood for being on prime time?
Questionnaire Design: Examples

- Double negative

- Parents should not be allowed to send their children to school if they are not immunized.

  Change to:

- Parents should be allowed to send their children to school even if they are not immunized.
Questionnaire Design: Examples

- Does respondent have needed info & terminology
  - Have you ever heard of a vaccine to prevent HPV and cervical cancer?
  
Change to:

Human papillomavirus also called HPV, is a common sexually transmitted infection known to cause cervical cancer in women. A vaccine to prevent HPV infection is available and is called the cervical cancer vaccine or HPV shot. Before today, have you ever heard of a vaccine to prevent HPV and cervical cancer?
Questionnaire Design: Examples

- Specific enough

- Where were you born?
Questionnaire Design: Examples

- All relevant responses included
  - Do you use regular or premium gas in your car?

- All responses are mutually exclusive
  - In which of the following do you live?
    - House
    - Apartment
    - Suburbs
Questionnaire Design: Response Categories Examples

- Discrete enough
  - How often do you have pain from your arthritis?
  - All the time
  - Most of the time
  - Some of the time
  - A little of the time
  - Rarely
  - Never
Exercise

- Did you buy the new brand of laundry detergent Clean and did you like it?
- What do you see as the benefits of a tax cut?
- Did you like the movie Life of Pi?
- Do you smoke?
- How much soda or sugar-sweetened beverages do you drink?
Drafting Questionnaire

- Can the question be misunderstood
- What assumptions does the question make
- Does the question contain difficult or unclear terminology
- Is time frame specified
Order

- Strong intro conveying what, who, why
- Start with easy, short, non-threatening, answerable question
- Is placement of question influenced by prior question
- Ask about one topic at a time
- When switching topics, use a transition
- More sensitive questions towards the end
- Conclusion – friendly & grateful for time & effort
Programming & Training

- Programming/Writing Questionnaire
  - Coding
  - Logical checks
  - Skip patterns

- Training
  - Interviewers trained and monitored
Pre-Test

- Critical for identifying questionnaire problems

- “Do not know”/”Refused” responses can be a sign of misunderstanding or sensitivity of question

- Assist in checking skip patterns & formatting

- Monitoring interviewers
Limitations & Biases

- **Coverage error** – when your study population is not inclusive
- **Sampling error** – random differences that exists between the sample and the study population
- **Non-response error** – differences between those who did not respond compared to those who did
- **Measurement error** – difference between the observed/reported value & true value
Administrative

- Costs
- Facilities
- Time
- Personnel
- Potential other resources
Simplicity

- Simplicity, simplicity, simplicity

- Greatest challenge is to take important topics and translate them into simple concepts, behaviors, and simple words....
Simplicity

...Otherwise, the result could be

- incomplete or misleading data
- item refusals
- respondent fatigue effects
- even the respondent’s complete refusal
Thank You