PROVE IT!
LET THE DATA TELL THE STORY.

University of New Hampshire
Institute for Health Policy and Practice

CENTER ON AGING AND COMMUNITY LIVING

Adapted from Prove It! Let the Data tell the Story. https://goo.gl/bGQNCA

FINDING and USING DATA

Dimensions of Data Quality:

- Relevance (represents group)
- Accuracy
- Timeliness
- Accessibility
- Interpretability
- Coherence

Elements for Shaping the Question:

Who: Age, Gender, Race/Ethnicity
What: Behavior, Health/Illness, Vitals
Where: Area, Residents v. Occurrences
When: Time period, Time trend

"How much data is good enough?"

It is about how good the data is – good quality, credible sources – not how much.

- If the data meet all the criteria for "good" data, one indicator may be enough.
- Establish your priorities for your research – use this as a guide.
- Getting the best return (value of your data) for you investment (time and energy).
- You may leave some stones unturned – avoid analysis paralysis.
- Be sure that each bit of data tells the reader something new.
- You may make some trade-offs (e.g. population data - old, but very reliable data). Some data may not change much year to year; old data may be ok.
- Know the data sources and collection methods- learn what to expect from the data.

DATA and STATISTICS

Measures of Central Tendency:

- Mean: mathematical average
- Median: 50th percentile, value that cuts the distribution in half
- Mode: most common value

Measures of Dispersion:

- Variance: total deviation from the mean
- Standard Deviation: average distance of any one value from the mean

Rates:

- Crude rates are used as summary measures for entire populations.
- Specific rates distinguish populations by other characteristics (e.g. age, gender, geographic region).
- Adjusted (standardized, or normalized) rates control for differences in the composition of populations (e.g., age) so we may better compare rates between areas or over time.

Confidence Intervals:

If the study is done correctly, we are 95% confident that the true population mean falls within this estimated range.

Tables and Figures Must Stand Alone

Clearly labeled and readable

- Titles, legends
- Footnotes
- Axes

Includes data definitions and data source

QUESTION DEVELOPMENT

Ethical Principles:

1. Participants should endure no harm (physical, psychological, or economic)
2. Confidentiality should be maintained unless EXPLICITLY given the right to break confidentiality
3. If someone participates, should be done voluntarily
4. People should be aware of funding sources
5. People should know, in general terms, what's going to be done with the information given
6. Need to let people know what is required of them in their participation
7. When reporting results, be honest and clear about how research was done; let others know the limitations of the findings
8. Do high quality work – don't waste the time of participants and others

Structural Issues:

To write "good" questions, must focus on 2 things:

1. Know the goal of writing the question
2. Know the specific goal of the question

Structural Types of Questions:

1. Open-ended questions
2. Close-ended questions

QUESTION DESIGN

Content:

1. Brevity
   - The shorter the question, the easier for the respondents to remember what was asked
2. Clarity
   - Be sure people can read and understand what you are asking
   - General rules
     - Provide definitions of key terms
     - Use of pronouns creates ambiguity
     - Double negatives are confusing
   - Translations: both conceptual and literal considerations
     - Address content and culture of question for proper translation
3. Reality
   - Not all questions are relevant to everyone
     - Create a contingency question, ask question to filter, or allow to skip
   - Intentions are more like attitudes than behavior, don't expect a 1:1 relationship
   - Hypothetical questions are very hard for people to answer.
4. Uni-dimensionality
   - Every question should deal with one issue.
5. Completeness
   - If giving people choices, be sure to cover most items people want to choose.
6. Loaded questions/Leading questions
   - Bias people toward one answer by presenting question in an unbalanced way
   - Social pressure, social norms can drive answers
   - Don't:
     - Use an unbalanced scale
     - Use "absolute words"(always, never)
     - Use reference to authority figures
     - Use words that are highly negatively charged