Marital status, college graduation, and disability among working-age adults

Adrianne Frech, The University of Akron Department of Sociology
afrech@uakron.edu

LEARNING OBJECTIVES:

- Understand how disability is defined across multiple measures
- Critique and compare measures
- Identifying independent and dependent variables
- Forming testable hypotheses using quantitative data
- Creating visual tools representing quantitative data in the form of charts or graphs
- Creating, reading, and interpreting tables
- Using data to support course concepts
- Using concepts of spuriousness, causality, selection effects

Data

The American Community Study is collected by the Census Bureau yearly, and the data it generates helps to fund local, state, and federal organizations. The ACS is based on what used to be the long-form Census.

Here is the 2013 ACS, the survey that creates the data we are analyzing:

http://www2.census.gov/programs-surveys/acs/methodology/questionnaires/2013/quest13.pdf

Pretest (ungraded!!)

The following data are from the 2013 American Community Study. This sample is limited to adults 18-64 years old. Although the sample is nationally representative of working-age adults, it **is not a survey of *all* Americans.**

Disability	Percent	N	Survey question(s)
Sensory (vision or hearing)	3.71%	76,527	Is this person deaf or does he/she have difficulty hearing? Is this person blind or does he/she have serious difficulty seeing even when wearing glasses?
Cognitive	4.50%	94,279	Because of a physical, mental, or emotional condition, does this person have serious difficulty concentrating, remembering, or making decisions?
Physical ("Ambulatory")	5.35%	110,635	Does this person have serious difficulty walking or climbing stairs?
Self-care	1.93%	41,321	Does this person have difficulty dressing or bathing?
Independent living ("Mobility")	3.74%	79,396	Because of a physical, mental, or emotional condition, does this person have difficulty doing errands alone such as visiting a doctor's office or shopping?
Any disability	10.71%	221,857	Answers "yes" to one or more questions above.

The above table tells us about those who were born with conditions, not those who acquired them from trauma.

True False

The above table tells us the percent of people who are both cognitively and physically disabled.

True False

The above table indicates that 4.5% of working-age adults (adults ages 18-64) have a cognitive disability. **True False**

To know how many people are disabled, you can either look at the "Any disability row" OR add up the percents from the individual rows. **True False**

The Scientific Method: Methodological Review

As social scientists, one of our goals is to evaluate testable research questions using sociologically relevant data. Use your knowledge of the scientific method as we evaluate the research questions on the following pages.

State your research question: What is the independent variable? What is the dependent variable?

State your hypotheses: What do you expect and why?

Collect and evaluate your data: What kind of data are "good" data? How will you evaluate it? How does data "answer" a research question?

State and disseminate your conclusions: Write up your findings and disseminate them in scholarly journals or data briefs.

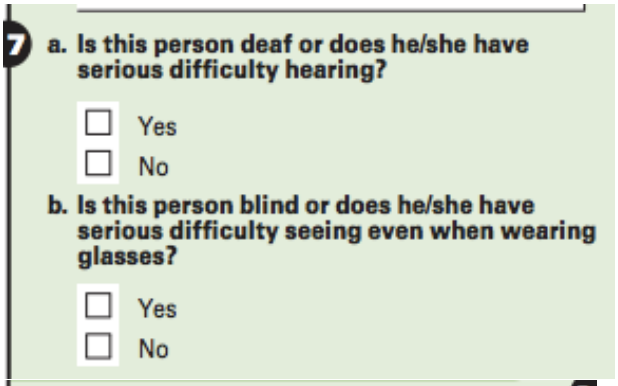
Spuriousness and causality: Does the independent variable really *cause* the dependent variable? How can we know?

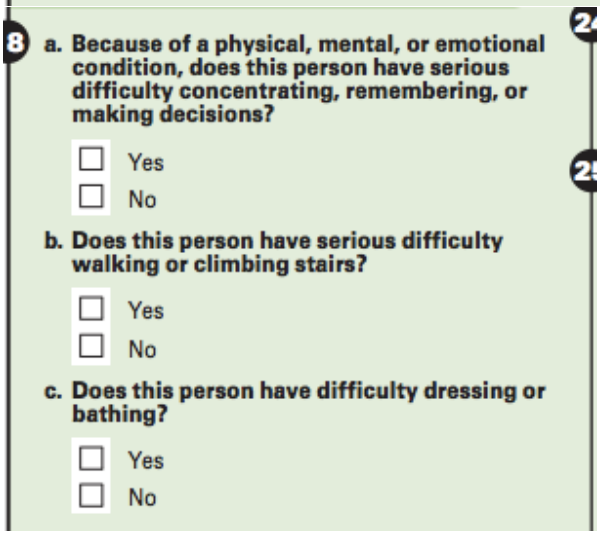
Limitations: What could we do better? What is still missing from the study, even if it could be conducted perfectly?

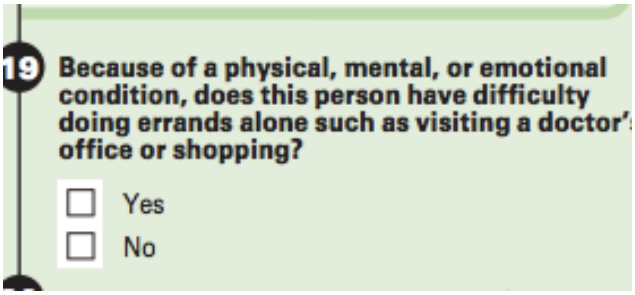
Exercise 1: What is a disability? How common are disabilities?

People with disabilities have "a physical or mental impairment that substantially limits one or more of [their] major life activities." Major life activities are functions such as caring for oneself, performing manual tasks, walking, seeing, hearing, speaking, breathing, learning or working.

Here's how disability is measured in the 2013 ACS:


7 a. Is this person deaf or does he/she have serious difficulty hearing?
☐ Yes
☐ No
b. Is this person blind or does he/she have serious difficulty seeing even when wearing glasses?
☐ Yes
☐ No


8 a. Because of a physical, mental, or emotional condition, does this person have serious difficulty concentrating, remembering, or making decisions?
☐ Yes
☐ No
b. Does this person have serious difficulty walking or climbing stairs?
☐ Yes
☐ No
c. Does this person have difficulty dressing or bathing?
☐ Yes
☐ No


19 Because of a physical, mental, or emotional condition, does this person have difficulty doing errands alone such as visiting a doctor's office or shopping?
☐ Yes
☐ No

In your view, what are the strengths and weaknesses of these measures?

+ We cover a range of mental and physical difficulty
+ Individuals have the freedom to self-identify to some degree whether a condition is disabling.
+ When combined, we can tell if a person has many disabling conditions.
+ The questions are worded so that we are capturing people who have difficulty *after* accommodation (glasses, for example)
- We don't know how severe conditions are
- We don't know if conditions are congenital (present at birth) or acquired (due to trauma or disease).
- We don't know how long condition is present or whether it could improve.
- Unlike other waves of the ACS, we don't know if it limits their ability to work for pay. -

As a class

Which of the above questions above would you chose as the best single indicator of someone you would consider to be "disabled"?_____

Why did you choose this indicator?_____

Which is the indicator of the most severe disability?_____

How common is disability? If we join all of the disabilities together and look for those with "any" of these, what do you expect to find? Remember, we are already limiting our sample to those who are 18-64.

-How does the survey help us answer this?
-How do we actually use the data?

```
.       svy: mean anydisab
(running mean on estimation sample)

Survey: Mean estimation

Number of strata =       1       Number of obs    =    1914755
Number of PSUs   =  1914755       Population size  =  197963854
                                  Design df        =    1914754
```

	Mean	Linearized Std. Err.	[95% Conf.	Interval]
anydisab	.10707	.0002823	.1065166	.1076234

What percent of people are disabled?
How many people are in this sample?
Who is represented? [18-64 years old, men and women, ACS 2013 respondents]
Who is excluded? Even though we have almost 2,000,000 people, we are ***not nationally representative of the entire country.***

Next, we'll evaluate the research question, "What is the association between gender and disability?"

IV

DV

Hypotheses:

This table gives you a very basic answer and adjusts for age.

	Male	Female	All
No disability	88.46%	89.12%	89.29%
Disability	11.54%	10.88%	10.71%
Total	100%	100%	100%

Is the prevalence of disability different by gender? Hand draw a bar graph to show your conclusion and state your conclusions in a few sentences here:

-Give your graph a title
-Label the independent and dependent variable on your graph

In groups

Disability in the ACS among adults ages 18-64 by type

	Physical	Cognitive	Sensory	Care	Mobility	Any
Male	5.37%	4.90%	4.44%	1.99%	3.75%	11.54%
Female	6.20%	4.32%	3.41%	2.11%	4.06%	10.88%

State a research question using one disability measures in the above table.

Question: What is the relationship between _____ and _____?

Independent variable:

Dependent variable:

What survey question from the ACS is associated with each dependent variable?

What is your hypothesis?

Why do you think this is the case?

Make a bar graph of the whole table above (not just the research question you chose). Label your axes!! Take time to plan how the graph would be most useful to a reader.

Online day assignment: Marriage and disability

Most adults express a wish to marry someday. Does disability affect your likelihood to be married?

Research question: What is the relationship between disability and marital status?

Independent variable: disability

Dependent variable: marital status

How will those with disabilities differ in their likelihood to be married, divorced, widowed, or never-married? Write two hypotheses about what marital status groups [married, divorced, widowed, never-married] you expect to be different for those with any kind of disability asked about in the ACS. Make sure you say *why* you expect the group to be different.

Example: I expect that those with disabilities will be _____[more likely/less likely] to be married than those without disabilities because _____

Example: I expect that those with disabilities will be _____[more likely/less likely] to be divorced than those without disabilities because _____

Marital status by disability status, adults ages 18-64, ACS 2013:

	Married	**Divorced**	**Widowed**	**Never married**
Any ACS disability	38.06%	18.50%	3.99%	71.62%
No disability	50.76%	11.03%	1.76%	31.79%

Construct bar graphs illustrating the above data (you can hand draw or use Excel or another software package). Bold, circle, or mark the parts of the graph that answer your research question.

1. Looking at the chart as a whole (and not just what answers your hypothesis), what differences do you find that you did not expect? What might account for these differences?

_____
_____
_____
_____

Posttest:

Use the data above to answer the following. If you answer false, explain why.

According to the table above, 88.76% of adults age 18-64 in the US are married. **True/False**

Explanation if false:

According to the table above, those with disabilities are more likely to be widowed than those without disabilities. **True/False**

Explanation if false:

Those with disabilities are more likely to be divorced and less likely to be never-married than those without disabilities. **True/False**

Explanation if false:

A college degree is increasingly necessary for a "good job".

Are those with *sensory disabilities* [hearing or vision impairment] less likely to graduate college than those who do not have a disability? Let's say we're limiting our sample to those who are working age and have no cognitive disability.

Research question:

Independent variable:

Dependent variable:

What is your hypothesis?

After analyzing your data, here are some findings:

Percent with college degree by disability (among those with no cognitive disability):
Sensory: 18.38%
Independent living: 11.81%
Physical: 12.49%
Mobility: 12.59%
No disability: 29.32% have college degree

State your conclusions from your hypothesis. Was it supported?

What non-cognitive disability is most likely to limit college graduation? Why do you think this is the case?

Why might college education rates differ among those with no cognitive difficulty?

References

Numeracy Infusion Course for Higher Education. "Assessing Quantitative Reasoning." Retrieved June 25, 2015, from http://serc.carleton.edu/NICHE/assessing_qr.html

Steven Ruggles, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. *Integrated Public Use Microdata Series: Version 5.0* [Machine-readable database]. Minneapolis: University of Minnesota, 2010.