Global Health Equity Pathway
Tips: Quantitative Research Methods

Quantitative Research: Test hypotheses through experiments and quasi-experiments; make predictions using measured amounts

Analyzing quantitative data:
- Measured amounts analyzed with descriptive (e.g., frequency, proportion) and inferential (e.g., regression) statistics

How to choose a statistical test:
- The data that you have available to you will help you decide on a statistical test or tests
- Will depend on the types of dependent variables (DV) and independent variables (IV) you are using
- Check that your data meets assumptions of a potential statistical test (e.g., if you want to use a t-test or other parametric test, does your data follow a normal distribution?)
- Visit the UCLA Institute for Digital Research & Education (IDRE): Choosing the correct statistical test in SAS, STATA, SPSS and R webpage for more*: https://stats.idre.ucla.edu/other/mult-pkg/whatstat/
  - *Keep in mind that the code provided is just how to perform the test, not how to clean the data. Data rarely comes through "clean"; you will need to use statistical software to clean your data.

Factors to consider in choosing a statistical software:
- Capability to conduct your selected statistical test; cost; and ease of use

Some to consider:
Your decision will have a lot to do with what platform your research team uses, what is most commonly used in your field of research, and the complexity and amount of data you're working with
- **Microsoft Excel:** Free and easy to use, limited capability for complex statistics; lots of online resources, including: Unite for Sight and Magoosh
- **SPSS**, try for free and view pricing options: https://www.ibm.com/products/spss-statistics
- **R** (along with R Studio), free and commonly used, download here: https://www.r-project.org
- **Python** (along with Spyder or Jupyter notebooks), download and use for free: https://www.python.org
- **SAS/JMP**, try for free and view pricing options: https://www.sas.com and https://www.jmp.com/en_us/home.html
- **STATA**, learn more and view pricing options: https://www.stata.com

Resources for learning statistical software:
- IDRE Zoom trainings (free), upcoming events here: https://stats.idre.ucla.edu
  - Upcoming seminars: https://stats.idre.ucla.edu/other/mult-pkg/seminars/
- DataCamp, start for free: https://www.datacamp.com
- Laerd statistics (SPSS, free): https://statistics.laerd.com
- And don't forget about StackExchange/YouTube/Google

Statistical consulting resources:
- IDRE (via Zoom, free): https://stats.idre.ucla.edu/ucla/policies/
  - Accessing remote services: https://stats.idre.ucla.edu/ucla/policies/remote/
- UCLA Clinical and Translational Science Institute (CTSI): https://ctsi.ucla.edu/researcher-resources/pages/biostats (free)
- UCLA Department of Statistics (for a fee): http://scc.stat.ucla.edu