PHP2510
EXPLORATORY DATA ANALYSIS WEEK 5

GRAPHICS IN PUBLIC HEALTH RESEARCH

For this activity, you will investigate how data is presented in the media. Your goals are to:
- Interpret graphical and numerical summaries
- Critically analyze the effectiveness of data visualizations in a real-world context
- Practice writing informative and compelling captions

DIRECTIONS

I have provided you with a collection of public health articles below. These articles contain at least one data visualization.

Your Task:

- Find at least 2 additional public health articles from reputable sources (e.g., The Lancet, Journal of the American Medical Association (JAMA), New England Journal of Medicine, Nature, etc.) that contain data visualizations.
- Among all the articles, select 3 to focus on, and select one data visualization within each article that you will critique.

REQUIREMENTS

For each of the articles you've chosen, complete the following:

1. Visualization's Message

- What is the single most important message or finding the graphic is trying to convey?
- Is this message immediately clear to the reader? Why or why not?
- How would you describe the findings to a non-technical audience? Try to convey the distribution of underlying variables or the relationships being shown.

2. Technical Analysis

- What type of plot is this (e.g., scatterplot, bar chart, density plot, boxplot)?
- What R functions or ggplot2 geoms do you think the original author used to create this graphic?
- Imagine you have the dataset. Write down any R code you could might use to create a similar plot (not exact syntax, just generally)

3. Improvement Suggestions

Is there anything about the graphic that you think could be improved? (e.g., color choice, clarity of labels, plot type, missing information). Propose any changes.

4. Caption

Imagine this graphic is being presented on its own (e.g., in a social media post). Write a caption (1-3 sentences) that summarizes the key takeaway without requiring the reader to understand the entire article.

5. Final Deliverable

Create 1 slide that allows you to share (some of) your work with the class. Add your handout answers into the speaker's notes. Submit your slide on Canvas as part of your participation grade.

ARTICLES

1. https://www.jsad.com/doi/10.15288/jsad.23-00283
2. https://globalflourishingstudy.com/wp-content/uploads/2025/04/GFS_Report-1.pdf
3. https://bruknow.library.brown.edu/permalink/01BU_INST/528fgv/cdi_proquest_miscellaneous_3216920521
4. https://bruknow.library.brown.edu/permalink/01BU_INST/528fgv/cdi_pubmedcentral_primary_oai_pubmedcentral_nih_gov_5154977
5. https://www.nature.com/articles/s41746-025-01888-5
6. https://bruknow.library.brown.edu/permalink/01BU_INST/528fgv/cdi_doaj_primary_oai_doaj_org_article_ac672f6b165e4676af38d1db5db5a4e4