IHP 525 Final Project Part II Guidelines and Rubric

Overview

Now that you have submitted Part I of the final project (the article review), you will submit Part II, which is the creation of a **statistical report**. Part I (article review) was an opportunity to demonstrate your ability to interpret statistics included in an article. This second part of the final project is a chance to show that you know how to do basic calculations.

Regardless of their field of interest, health professionals across disciplines need to be able to run basic biostatistical calculations to describe a set of data.

Part II reinforces these critical skills by asking you to conduct your own analysis of a small data set, explain the basic parameters of the data, graph it, and run simple tests. You will present this data analysis in a brief statistical report, using language appropriate to a non-technical audience.

Part II of the final project consists of **four milestones,** submitted in **Modules Two, Three, Five, and Seven.** The final submission occurs in **Module Nine.**

In this assignment, you will demonstrate your mastery of the following course outcomes:

- Perform basic, context-appropriate statistical calculations and hypothesis testing in accurately analyzing biostatistical data
- Interpret key biostatistical metrics, methods, and data for addressing population-based health problems
- Communicate biostatistical results, procedures, and analysis to other health professionals and the general public for informing their decisions related to population-based health problems

Prompt

Biostatisticians are constantly called upon to analyze data in order to help researchers and health officials answer critical questions about populations' health. For this assessment, you will imagine you are a biostatistical consultant on a small study for a local health organization. You have been given the data set provided, along with some background information on how and when the data was collected and the general research question the organization is interested in answering. This is often the way you will receive data in the real world.

Your task is to help the organization answer their question by critically analyzing the data. You will run statistical tests, interpret the results, and present the results and recommendations to non-technical decision makers in the form of a statistical report. Keep in mind that it is your job to do this from a statistical standpoint. Be sure to justify your conclusions and recommendations with appropriate statistical support.

Specifically, the following **critical elements** must be addressed:

I. **Introduction**
   A. State the overall **health question** you have been asked to address in your own words. Be sure you capture the key elements of the question, using language that a non-technical audience can understand.
   B. Assess the collected **data.** Use this section to layout the source, parameters, and any limitations of your data. Specifically, you should:
      1. Describe the **key features** of your data set. Be sure to assess how these features affect your analysis.
      2. Analyze the **limitations** of the data set you were provided and how those limitations might affect your findings. Justify your response.
   C. **Process:** Propose how you will go about answering the health question you were asked to address based on the data set provided.

II. **Data Analysis**
   A. **Graphs:** In this section, you will use graphical displays to examine the data and formulate an initial hypothesis. In particular, you should:
      1. Create key graphical **displays** that give a sense of potential relationships between variables. Include the graphs and discuss why you selected these graphical displays as opposed to others.
   B. Conduct appropriate hypothesis **tests**, simple regressions, and other tests to analyze the data set.
   C. Explain why these tests are the **best choice** in this context and how they compare with established best practices.
   D. **Analysis of Biostatistics:** Use this section to describe your findings from a statistical standpoint. Be sure to:
      1. Present key **biostatistics** from the graphs, tests, and regressions performed, and explain what they mean. Be sure to include a spreadsheet showing your work as an appendix.
      2. What **statistical inferences** or conclusions can you draw based on the hypothesis tests and simple regression analyses performed? Justify your response.

III. **Conclusions** and Recommendations
   A. How do the **findings** help answer your overall health question? Remember to use brief, non-technical language to ensure audience understanding.
   B. **Recommend** areas for further research based on your findings. Remember to use brief, non-technical language to ensure audience understanding.