Instructions

The Lab Report 1 assignment provides you with an opportunity to conduct data analysis to test a health-related hypothesis of the relationship between two variables from the class survey data and present your results as a scientific write-up following the IMRaD format.

In this assignment, you will practice descriptive and inferential analysis and graphing using variables of your choice from the Class Survey data. You will write about your methods, results, and interpretation in the IMRaD format. The overall goal is to convey scientific findings clearly and accurately to a professional audience.

Lab Report 1 requires the following sections:

1. title and author,
2. abstract,
3. introduction,
4. methods,
5. results
6. discussion, and a
7. reference list.

Section 1: Title and Author

1. **Descriptive Title:** Brief descriptive title related to the hypothesized relationship between the predictor and outcome. The title may imply results or simply identify the topic area.
2. **Author**: List your First and Last Name
3. **Course:** List the Course Title and Semester (i.e. BBH 411 Spring 2020)

Section 2: Abstract

1. Write a 4-5 sentence summary of the whole paper, briefly touching on the main sections including the introduction, methods, results, and discussion.

Section 3: Introduction

The introduction should be one (1) to two (2) paragraphs that provide background and context for the research question and corresponding health-related hypothesis you developed to examine using class survey data. This section must clearly state the hypothesis, the predictor variable, and the outcome variable, as well as the anticipated direction of the relationship. Specifically, include:

1. A discussion of at least two supporting references that are cited appropriately and included in the full reference list. You may draw upon sources and articles that you have discussed in prior class assignments and discussions or you may use new sources.
2. A statement describing the research question.
3. The precise hypothesis.
4. A description of the predictor variable (name and concept, no data).
5. A description of the outcome variable (name and concept, no data).
6. The anticipated direction of the relationship between the variables. Remember that in a direct relationship, if one variable increases, so does the other or vice versa. In an inverse relationship, the variables will increase or decrease in the opposite direction, or as one goes up the other will go down.
7. A discussion of the major reason(s) why the hypothesis might be true. In other words, discuss the supporting evidence or prior research, related to the hypothesis. Explain the reasoning.
8. Conclude this introduction section with a statement explaining how the hypothesis will be tested using survey data from a group of college students.

Section 4: Methods

The methods section should be approximately two (2) to three (3) paragraphs and should address the following items:

1. Describe the participants who provided data and the population from which they were drawn.
2. Describe how the survey was distributed to participants.
3. Describe the survey measures. Specifically, state the survey question details for how each question was asked, what was cleaned (if anything), and how it was coded, if necessary.
4. Describe the statistical analysis chosen for your hypothesis test(s). Justify each choice of correlation, T-Test, ANOVA, or Chi-Squared based on the variable scales of measurement. State whether variables were treated as categorical or quantitative after coding. Provide the alpha level set as the threshold for significance (i.e. p < .05). **REMINDER:** Do not give results in this section; only describe the methods.

Section 5: Results

The results section describes the results of statistical analyses and may include a graphical representation of the data. This section will be approximately two (2) to three (3) paragraphs in length.

1. Provide the **overall sample size** for the survey
2. Give the statistics describing the **typical responses** for all variables in your analysis.

**Typical responses:** These are **descriptive statistics and/or frequencies**, as appropriate, based on the scale of measurement of the variables.

**Nominal and ordinal scale variables:** Report the **valid percentage** of responses for each response category. Remember that the valid percent represents the percentage of people who responded in each of the categories, not the entire sample.

**Quantitative (numeric) variables:** Report the average (mean), the standard of deviation, and the units of the measure.

1. **Hypothesis Test(s)**
   1. Explain the result of the test(s) of association between your predictor and outcome variables. Be sure to note the predictor, outcome, and significance. Provide the statistical details, including the test statistic and its value, degrees of freedom and the significance level as evidence to support the result you explained. Place these in parentheses at the end of the sentence describing the results of the tests of association.
   2. **Graphs/Figures**
      1. Create histograms for each of your variables. Include simple captions to state that the histogram shows a frequency distribution of that variable.
      2. Make a graph for your main hypothesis test, the primary focus of the study, showing the relationship between predictor and outcome. Just like the statistical test depends on the scales of your variables, the type of graph does too. Include a caption describing the finding, similar to the hypothesis test sentence, so include whether the effect was significant, but also mention how many students provided data for that analysis and remind the reader of who participated in the study.

Section 6: Discussion

The discussion section provides context to and an interpretation of the study results. It also connects the study results to the broader literature on the health topic. It will be between two (2) and three (3) paragraphs in length. It must include a discussion of at least two relevant scholarly sources. It should address these items:

1. State the main results of the study.
2. Provide context for the results.
   1. If the results were significant and consistent with the original hypothesis, state that and make a connection to the original reason you thought the predictor influences the outcome. Describe at least one alternative interpretation for any relationship observed. In other words, suggest a different but reasonable explanation for the results.
   2. If the original hypothesis isn’t supported, discuss possible reasons why. Consider issues such as the effect was too small to be detected, or the measures were not sensitive/specific enough, or there is too much variability in the population, or other issues specific to the survey sample.
3. Thoughtfully describe important limitations of examining the proposed relationship according to the methods used for this report.
4. Conclude with a sentence stating the bottom-line result of this study.

Section 7: Reference List

1. Write proper references for the peer-reviewed scientific articles you used in APA format.
2. Ensure proper placement and the required information for parenthetical in-text citations in APA format throughout the submission.

Written Response and Paper Format Directions

1. Prepare your response in a word-processing document.
2. Your complete essay should be a **minimum** of around 2 single-spaced pages (1-inch page margins and 12-point font), excluding your reference list, name, and title; there is no maximum page requirement.
3. Your Lab Report should include the following sections. You should present the sections in the order below. Graph placement may vary for the best flow:
   1. Title and Author
   2. An abstract
   3. Introduction that provides background about the topic and data
   4. Methods
   5. Results
   6. Graphs with descriptive labels and/or sentences
   7. Discussion
   8. Reference list
4. Cite ALL references as appropriate using in-text citations as appropriate and include a reference list at the end of your written summary. This includes any of the instructional material included in this lesson or the course. All answers and conclusions must be supported, as appropriate, with evidence and resources/citations using APA. Reference the **Writing and Citation Resources** for assistance, which can be found in the **Student Resources** module.
5. Use a professional writing style.