

## **HSC 403 - Signature Assignment**

### **Article Critique**

The purpose of the assignment is to give you experience critically examining a peer-reviewed journal article. This critique will focus primarily on the Methods and Results sections, but information may also be found in the Introduction and Discussion sections. The article to be critiqued can be found on BeachBoard.

- Use the section outline below to develop your critique. Answer each question in the space provided.
- Your article may include advanced analyses (e.g., Multinomial Logistic Regression) that you have not yet learned in your undergraduate coursework. Please only discuss analyses that you have been taught (e.g., independent sample t-tests) in your answers below. The assigned article includes analyses that you have learned, so you will be able to answer all of the questions below.
- Use complete sentences when responding to questions. Be sure that you use proper conventions of scientific writing in your responses to all questions, including correct formatting and symbols. This also means that you should cite references appropriately; you must use APA format for in-text citations and the reference list for all cited sources. You must consult the APA Manual to do this correctly; please also use the Example Reference Page provided as a guide.
- All answers should be expressed in your own words. Paraphrase or summarize as necessary, but do not take verbatim text from the article (i.e. do not copy and paste). All answers will be checked by Turnitin to ensure that students do not plagiarize.
- Total word count for all your responses combined *must be at least 500 words*, but no more than 600 words.

### **Assignment:**

#### **Pre-Critique Question**

1. Prepare and provide an APA-format citation for this article:

#### **Critique Questions**

1. After reading the introduction to the article, broadly speaking:
  - a. What is the health topic of focus in this particular research article? (Note, this is NOT the same as a research objective or research question)
  - b. In your own words, summarize the rationale that the author(s) provide for needing to address this health issue (i.e., why does this health issue need to be studied?).
  - c. Describe one objective, research question or hypothesis from the study, in your own words.

2. The following questions focus on the study sample.
  - a. Who is the target population? Be sure to describe any unique characteristics of the target population (e.g., rural, disabled, low-income, etc).
  - b. Who does the study sample actually consist of? Be sure to describe how the sample was collected (e.g., a quota sample) and any other unique characteristics of the sample that was recruited.
  - c. What was the total sample size for the participants recruited into the study?
  - d. To what degree is the study's sample representative of the target population? Justify your answer.
3. Using the article's Results section, find one example of a descriptive statistic that was presented and answer the set of questions below about this descriptive statistic.
  - a. List the descriptive statistic you chose.
  - b. What variable was being measured?
  - c. Discuss how that variable was measured?
  - d. What was the level of measurement for that variable? Explain why it fits under this level of measurement.
  - e. Given the level of measurement for the variable, why was that descriptive statistic used? Was it the appropriate descriptive statistic to use for this variable? Explain why or why not. If not, explain what a more appropriate descriptive statistic would have been.
4. Find the result of one hypothesis test (inferential analysis) from the article and then answer the set of questions below about this inferential analysis.
  - a. List the hypothesis test result that you chose.
  - b. First, provide the research question for the hypothesis that was tested, using your own words.
  - c. List the test statistic and the  $p$ -value for the result from the hypothesis test stated in 4a.
    - i. Describe if the results are statistically significant or not, and how you arrived at that conclusion.
    - ii. What does the number for the  $p$ -value tell us, aside from providing a cut point for concluding statistical significance?

- d. In everyday language, what does this result of the analysis tell us about the variables being tested? That is, explain the results for someone with no background in statistics.
  - e. Did the authors provide an effect size (i.e., real world significance value) for that result?
    - i. If yes, list it, and explain what the effect size tells you about that result (i.e. discuss the magnitude and clinical significance expressed by the effect size). Your response must include the variables being tested.
    - ii. If not, explain why including the effect size is helpful in providing more information about the test result.
5. A student researcher wanted to further explore the data from this article and posed the following research question: *Is age related to peak expiratory flow rate (PEFR)?* Answer the following questions about this new research question.
- a. Given the levels of measurement for the IV and DV you selected, which hypothesis test (inferential statistical analysis) would be most appropriate to answer the research question? Explain why this is the appropriate statistical test.
  - b. Based on the statistical analysis you selected in 5a, provide an example of how the results of that test should be reported, using mock numbers. Your write-up must include all relevant values, should be stated using correct statistical terms and notation, and be formatted according to statistical reporting standards. (Reminder: For this question, you are not running any analyses)

**BONUS QUESTION** (Note: You are not required to answer this question, but if you do, and your response is correct, points will be worth extra credit for this assignment)

**BONUS 1.** Using the result you listed in question 4, did the authors provide a confidence interval for any statistic or estimate in that result?

- a. If yes, list it, and explain what the confidence interval tells you about the result (your response must include the variables being tested).
- b. If not, explain for what statistic or estimate a confidence interval should have been reported and explain why. Or if a confidence interval was not appropriate for any statistic or estimate, explain why.