

Name: _____

Psyc 3214 / Fall 2018 / Quizam #3

1. A health psychologist attempts to assess the average effectiveness of using cats or dogs in improving the moods of chronic illness patients. He randomly assigns 25 people to spend visitation time with only a cat or only a dog. After two months he measures their overall mood using a self-report questionnaire. Scores on the questionnaire can range in value from 0 to 100, with high scores indicating a more positive mood. The data follow:

Cats: 43, 34, 28, 30, 15, 49, 20, 58, 61, 41, 48, 35, 42

Dogs: 59, 65, 78, 58, 62, 85, 40, 28, 70, 41, 50, 56

- a. The psychologist, a long-time feline fanatic, expects the cats to yield overall better mood in a hypothetical population of patients compared to the dogs. Is his hypothesis supported? Using an alpha level of .05, conduct a NHST on these data. Work through all of the steps of NHST, showing all of your work, and interpreting the results along the way.

- b. Compute eta-squared as an additional measure of effect size.

c. What type(s) of error(s), I, II, or III might the researcher have made with his conclusion? _____

d. What is the Independent variable in this study? _____

e. What is the dependent variable? _____

Multiple-Choice and True-False

1. What usually happens when you violate one of the sensitive assumptions of the independent samples t-test?
 - a. The APA enforcement board may revoke your degree.
 - b. Statistical power increases.
 - c. Type II error rate implicitly increases.
 - d. Type I error rate implicitly increases.
2. A researcher tells you that she just found a large effect size for her study. She claims, “Wow, the η^2 value was 1.97!” You respond by stating _____.
 - a. “I’m sorry, but you are confused, η^2 cannot be greater than 1.0.”
 - b. “Actually, it is just barely significant at the .05 level.”
 - c. “You are correct. Even without Cohen’s conventions, that is a huge effect!”
 - d. “Sorry, but η^2 is not a measure of effect size.”
3. If you know what the null hypothesis is for a study (e.g., $H_0: \mu_1 = \mu_2$), you can look at the confidence interval and determine whether or not the t-test was statistically significant. (True / False)
4. Statistical power is the probability of _____.
 - a. making a Type I error
 - b. replicating a non-significant finding
 - c. finding the effect you are looking for if it is truly there
 - d. incorrectly rejecting the null hypothesis
5. Which of the following is true regarding the “Belief in supernatural agents” paper we examined in class?
 - a. The researchers failed to randomly assign participants to the death and food writing groups
 - b. The observed p-values were greater than .05 and should have been declared as nonsignificant
 - c. The researchers failed to report and interpret effect sizes
 - d. Single-sample t-tests should have been used to analyze the data
6. Consider the integrated model constructed by Dr. Grice and his students for the “Belief in supernatural agents” paper we examined in class. Further consider a student in the death-writing group who wrote, “When I die a trust I will be united with my Lord and Savior in Heaven. I hope to see my loved ones again as well.” Why is this a problem for the original researcher’s hypothesis/theory?
 - a. The student did not follow the instructions
 - b. The student removed his unconscious anxiety through his statement, which means it could not serve as a cause of his rating on the religious scale
 - c. The student created extreme unconscious anxiety through his statement, which would then determine his rating to be a “7” on the religious scale
 - d. The statement would lead to a “reaction formation” which would cause him to rate himself as a 1, 2, or 3 on the religious scale