

## AS1(Assignment 1, Unit 5) Independent Measures t-test

Please write your responses in red 😊

A pharmaceutical company wishes to test the effects of a herbal supplement on anxiety levels. The researcher randomly selects a sample of  $n=16$  adults from Essex County. The sample is randomly assigned to either the herbal supplement, Group B or a placebo, Group A.

Here are the data:

GROUP "A"

12, 16, 18, 21,

17, 18, 18, 19

GROUP " B "

13, 18, 20, 16

19, 21, 19, 22

1. What is the researcher's hypothesis?

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2. What is the null hypothesis?

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3. What is the independent variable?

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4. What is the dependent variable?

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5. What is the name of the *research design* in this study?

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6. What is the appropriate *hypothesis test* to analyze the data from this study?

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7. What are the two mean “differences” you are analyzing in these data?

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8. What is the definition of a random assignment?

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9. Why is using a random sample important in this study?

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10. If a researcher failed to use random assignment, how would this affect the research conclusion?

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11. If a researcher failed to use a random sample, how would this affect the research results?

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12. Run the appropriate SPSS analysis on the data and cut and paste your SPSS results here:

13. Based on your SPSS results, please answer the following questions:

(a) What is the appropriate decision, reject the null or fail to reject the null? \_\_\_\_\_

(b) Write the “statistical statement” of your SPSS analysis: \_\_\_\_\_

(c) Please write your results as they might be written in a research study (refer to the “In the Literature” section of chapter 10 of your textbook).

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(d) Is there a probability of Type I error? Yes \_\_\_\_\_ No \_\_\_\_\_

(e) Is there a probability of Type II error? Yes \_\_\_\_\_ No \_\_\_\_\_

