You believe your new mental exercise will influence life satisfaction differently based on gender. You gather 6 married couples, give them the therapy, and test their life satisfaction (normally distributed at the population level).

 1. H0 =

 2. HA =

 Your data:

 Husbands Wives

5 6

7 8

 6 5

6 7

 8 8

5 7

3. Why is a dependent t test appropriate for this data set?

4. How does this test take advantage of the relationship between the groups?

5. Calculate your t statistic.

6. Evaluate your Null Hypothesis.

7 Explain what this evaluation means about your sample means.

8. Describe the error you might be making.

Answers:

H0 = mental exercise has no effect (population means are the same; sample differences are chance)

HA = mental exercises affect life satisfaction (population means are different)

Because your two groups are made of pairs of people with naturally occurring relationships.

Subtracting the scores reduces common influences (married people have lots of things in common).

*t* = 1.58; df = 5, *p =* .175 (17.5%)

Retain H0

The samples are probably different in life satisfaction because of chance.

A Type 2 error could have been made, maybe gender was the reason for the diff in life sat.