SPSS Examples – Related Measures T-tests and Confidence Intervals.

1. You are approached by a fabulous client who believes that stress makes asthma symptoms worse for people who suffer from this respiratory disorder. Because of the suspected role of stress, she asks your consulting agency to examine the effect of relaxation training on the severity of asthma symptoms. To assist her in her research question (and to make the big bucks), you gather a sample of 5 patients for your study. During the week before treatment, record the severity of their symptoms by measuring how many doses of medication are needed for asthma attacks. Then the patients receive relaxation training. For the week following training, you once again record the number of doses required by each patient. Here are the data you gathers. Does relaxation matter?

 Patient Week before training Week after training

1 9 3

2 4 1

3 5 0

4 4 3

5 7 2

Tell the audience who you are, and what the research question you’ll be addressing is. Why is it important? How are you going to answer it? What are the associated hypotheses and criteria? Describe your sample(s) and then interpret your findings. What do the confidence intervals tell you? What do they mean in English since your client couldn’t calculate a mean if their life depended on it. What policy recommendations do you have? Any future research?

1. Another client, hearing of your great behavioral medicine research, comes to your offices. After riding the elevator up to the penthouse where your office is located, he presents you with his research issue. He wants to understand the effect of hypnosis on cigarette smoking. He thinks that it may reduce or eliminate one’s need to smoke. To address his question, you gather a sample of 8 smokers and record the number of cigarettes smoked on the day prior to treatment. The respondents are then hypnotized and given the posthypnotic suggestion that each time they light a cigarette, they will experience a horrible taste and feel nauseous. The data you gather are:

 Respondent Before Hypnosis After Hypnosis

 1 19 12

 2 35 36

 3 20 13

 4 31 24

 5 22 9

 6 28 14

7 41 17

8 21 24

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1. The CEO of the local doggie day care center is interested in beginning a new marketing campaign. Her idea is to advertise that people who have pets are far happier than those who do not have pets. She comes to you to see if you can conduct some research because she doesn’t wish to conduct an unethical (i.e., untrue) marketing campaign. To investigate this research question, you gather a group of people and you match a group of non-pet owners who are compared to pet owners using a mood inventory. The pet owners are matched one to one with the non-pet owners for income, number of close friendships, and general health. The data your gather are as follows:

 Matched Pair Non-Pet Owner Pet Owner

 1 10 15

2 9 9

3 11 10

4 11 19

5 5 17

6 9 15

7 12 9

8 14 17

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1. The owner of a local Agoraphobia clinic has hired your consulting agency to address a very important problem. People with agoraphobia are so filled with anxiety about being in public or unfamiliar places that they seldom leave their home (or don’t not go far from them). Knowing this s a difficult disorder to treat, the owner of Agora Angels, LLC has devised a long-term treatment plan. They believe that the use of foot stimulation and massage will help to reduce the anxiety felt by these individuals. They need your firm to tell them if there is evidence that his to-be patented foot stimulation and massage treatment works in reducing anxiety. To test this, you gather a sample of Agoraphobes and rate their anxiety (on a scale of 1-100; 100 being highest levels of anxiety) at leaving the home before and after the foot treatment. The data your gather are as follows:

 Agoraphobe Before Treatment After Treatment

1 100 75

2 90 92

3 71 70

4 41 39

5 57 17

6 92 45

7 35 19

8 44 17

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1. Jack Black, the founding owner of “Nightmares are Us”© has come to you to ascertain if his new magic elixir designed to generate nightmares really works. He wants to market this elixir, increase the number of nightmares, and ultimately become a millionaire. His long-term plan is to generate a lot of gnarly nightmares and then sell, at huge profit, the anti-nightmare he elixir he is currently working on. To study if his elixir does indeed generate more nightmares, you conduct a study. To investigate this research question, you gather a group of people and you match pairs of people who are compared to each other. These people are matched in terms of gender, age, race, stress from work and number of children. The data your gather are as follows:

Pair Before Elixir After Elixir

1 6 1

2 10 2

3 3 0

4 5 5

5 7 2

6 9 3

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