

Chapter 18: Advanced statistics - What next?

Full answers to study questions

1. Anxiety and different interventions design:
 - 1.1. There would be 10 t tests. The contrasts would be: control vs placebo, control vs prescribed, control vs alternative, control vs CBT, placebo vs prescribed, placebo vs alternative, placebo vs CBT, prescribed vs alternative, prescribed vs CBT, alternative vs CBT.
 - 1.2. Bonferroni corrected alpha would be $\alpha = .005$ ($.050/10 = .005$).
 - 1.3. There are a number of ways you could write this hypothesis, but the key thing is that it is two-tailed. So it must specify that conditions will vary, but not where the differences would be.
 - 1.4. Again, many hypotheses could work here, but they would have to be one-tailed, so you would specify where you think differences would lie and where scores would be higher or lower.
2. You could have suggested many, many different IV2s and DVs in this exercise. The important thing is that you really thought about how the scores changed for control and clinical groups, and whether the two groups scored the same, or whether one group scored higher or lower. There are lots of possible options for this exercise, so there are not precise answers. Instead below are some key points to think about.
 - 2.1. No interaction: Answer given in the Chapter.
 - 2.2. Interaction 1: Here, in condition X people with depression needed to score higher than controls. Looking at the difference from X to Y, scores need to decrease for people with depression and increase for controls so that controls now score higher than participants with depression.
 - 2.3. Interaction 2: In this example both groups scores exactly the same in condition X, but the change to condition Y shows that scores decrease for those with depression and increase for participants in the control group.
 - 2.4. Interaction 3: Again, both groups should score the same in condition X, but in this example participants in the depression group score exactly the same in condition Y, whereas scores increase markedly in condition Y for participants in the control group.
3. As this is a design task, it isn't possible to give you exact answers! But for each study you should have two confounds, one continuous variable and one binary categorical variable, and you should have a directional prediction for each one.