Lab exercises for Module 2

**Power Analysis: Two different methods**

**Method 1:** Use dfhyp & dferr

Definitions:

**dfhyp:** is basically an index of the complexity of the problem. For example, when comparing 2 groups, dfhyp = 1. When comparing 5 groups, dfhyp = 4. If you are evaluating 7 predictors of an outcome, your dfhyp = 6.

**dferr:** the degrees of freedom for the estimate of error used in the test (dferr).

**Sample size:** N = dfhyp + dferr + 1

1. Use Murphy, Myors & Wolach (2014) Appendix E to compute sample size for the following problems at a power level of .80 and α = .05. This table uses two alternative ways of indexing effect size, *d* and *PV*, or the percentage of variance explained. In general, *PV* = .01, .10 and .25 represent small, moderately large and large effects.
   1. For a study comparing 2 groups, calculate the dferr & sample size required to detect a PV of .01
   2. For a study examining 4 predictors of an outcome, calculate the dferr & sample size required to detect a PV of .10
   3. For a study comparing 8 groups, calculate the dferr & sample size required to detect a PV of .25

**Method 2:** Use G\*Power

1. Download G\*Power
   1. Go through the tutorial with them
   2. Have them work out power for independent t-test and for ANOVA (F tests) with 4 groups
      1. Work out all five variations of power analysis (e.g.,compute N given ES, alpha etc)