Quiz 4

Marian Pitel

November 8, 2016

QUESTION A - HYPOTHESES

A) Using effect size standards described by Bosco et al (2015), I hypothesize that that there will be a strong, positive relationship between self-esteem and academic performance, such that increases in self-esteem scores will be related to large increases in academic performance scores.

B) Using effect size standards described by Bosco et al.(2015), I hypothesize that there will be a strong, negative relationship between self-esteem and quality of dating relationships, such that increases in self-esteem scores will be related to large decreases in scores on quality of dating relationships.

C) Using effect size standards described by Bosco et al.(2015), I hypothesize that there will be a weak positive relationship between self-esteem and quality of friendships, such that increases in self-esteem scores will be related to small increases in scores on quality of friendships.

QUESTION B - NSHT: POWER ANALYSIS

A) For hypothesis A.A, I will be conducting a bivariate correlational analysis. I conclude from the result of a traditional power analysis that a sample size of at least $N = 29$ is needed to obtain $r = .50$ between self-esteem and academic performance.

B) For hypothesis A.B, I will be conducting a bivariate correlational analysis. I conclude from the result of a safeguard power analysis that a sample size of at least $N = 346$ is needed to obtain the lower-bound r = -.15 between self-esteem and quality of dating relationships.

C) For hypothesis A.C, I will be conducting a bivariate correlational analysis. I conclude from the result of a traditional power analysis, assuming a weak effect (Bosco et al., 2015), that a sample size of at least $N = 1599$ is needed to find a weak correlation between self-esteem and quality of friendships.

D) After conducting three separate power analyses to determine the sample sizes ideal for my hypotheses, I conclude that I would need a sample size of at least $N = 1599$ for my proposed study.

QUESTION C - CI: POWER ANALYSIS

A) Self-esteem and academic performance: To ensure that the width of the confidence intervals will not exceed the magnitude of the effect (r=.50), the sample size would need to be at least $N = 38$, 95% CI [0.22, 0.71].

B) Self-esteem and quality of dating relationships: To ensure that the width of the confidence intervals will not exceed the magnitude of the effect (r=-.30), the sample size would need to be at least $N = 150$, 95% CI [-0.44, -0.15].

C) Self-esteem and quality of friendships: To ensure that the width of the confidence intervals will not exceed the magnitude of the effect (r=.07), the sample size would need to be at least $N = 2500$, 95% CI [0.03, 0.11].

D) After conducting three separate sample analyses for my hypotheses to ensure that the width of the confidence intervals will not exceed the magnitude of the effect, I would need a sample size of at least $N = 2500$ for my proposed study.