HOMEWORK ASSIGNMENT 4 **NAME: SRUTI JAIN**

ACN 6313-003
Dr Nancy H. Juhn

Lab Date: 3/28/2017
Due Date: 4/5/2017

Question 1

First run a regression to predict Libido from partners libido and dummy variables for dose (use placebo as the reference group).

a) Was partners libido a significant predictor of Libido?
The regression analysis revealed that the variable Partners Libido accounted for a significant amount of variance in the variable Libido, b= .42, t(26) = 2.23, p = .035 at the 0.05 level of significance.

b) Were low or high doses of Viagra significant predictors of libido? Give relevant b and p values, and discuss their relationship with libido.
The regression analysis revealed that the variable Low dose of Viagra accounted for a significant amount of variance in the variable Libido, b= 1.77, t(26) = 2.1, p = .045 at the 0.05 level of significance so did the variable High dose of Viagra, b= 2.22, t(26) = 2.77, p=0.01 at 0.05 level of significance. The variables Low dose of Viagra with respect to placebo(ref group) and High dose of Viagra with respect to placebo(ref group) had a positive influence in the variance in the variable Libido.

c) What was the constant and how do we interpret it in terms of the placebo group?
The constant value was 1.79. It is equal to the value when the partner's libido is zero and when the dose taken by the participant is Placebo.

Question 2

Now run an ANCOVA using libido as your DV, dose as your IV, and partners libido as your covariate.

a) Was partners libido a significant covariate? Report the relevant f-value?
The variable partners Libido was a significant covariate in the ANCOVA model accounting for a significant variance in Libido, F(1, 26) = 4.96, p = .035 at 0.05 level of significance.

b) Were the different dose conditions significantly different from each other? How do you know this? Report the relevant F value(s) and means (main effect of dose).
The variable Dose in the ANCOVA model accounted for a significant variance in Libido, F(2, 26) = 4.14, p = .027 at 0.05 level of significance. The descriptive statistics revealed that the dose conditions for high and low dose of Viagra had the same mean ($M_{low} = 4.87$, $M_{high} = 4.84$) but the mean value was different for placebo dose ($M_{placebo} = 3.22$).

c) Based on the previous answer, is it necessary to further look at group differences? If so run a post-hoc analysis, while controlling for multiple comparisons (bonferroni). What does this test tell you?

Yes, it is necessary to analyze further the three levels within the dose variable to analyze further the impact of each of these levels on the variance accounted in the dependent variable Libido. Planned contrasts using Bonferroni method revealed that having a high dose of Viagra significantly increased libido compared to having a placebo p =.031 but not compared to having a low dose p =.136.

Question 3

Use the following data to conduct a 2 x 3 ANOVA by hand. Use your preferred method for carrying out the analysis. The fields textbook shows one option (pg. 515-520).

male			female		
short	average	tall	short	average	tall
0.5	2.5	10	5	5	6
3	5	6	4	3	5
2	5	6	2.5	4	8
3	4	3	2	3	3
1	5	6	0	2.5	3
2.5	2.5	8	4.5	5	5

Solution:

Source	SS	Df	MS	F
Model	73.8	5	14.76	5.41
Gender	0.54	1	0.54	0.2
Height	63.84	2	31.92	11.69
Gender x height	9.42	2	4.71	1.73
Error	81.89	30	2.73	__
Total	155.69	35	__	__