**Research Question:**

A colleague tested undergraduates on their general happiness and overall search for happiness. They want to know what affects general happiness scores and have measured several other variables they think may affect happiness.

**DV:**

Happiness Total – variable that contains college students’ general happiness scores. Higher scores indicate higher levels of happiness (0-35).

**IV(s):**

Gender – male/female.

Ethnicity – Caucasian, African American

**CV(s):**

GPA – 0 to 4.0

Search for Happiness – Higher scores indicate college students are searching for happiness in their lives (60-135).

You must run at least TWO post hoc comparisons even if your interaction was not significant (i.e. you actually have to run something, not just male versus female), and report them.

Include the following SPSS boxes:

1. Data screening:
   1. Accuracy – show the data is accurate with a descriptives box.
      1. If not, fix the accuracy errors by deleting that data point.
   2. Missing data – show if there are any missing data with a descriptives box.
      1. Fix the missing data by using linear trend at point.
   3. Outliers
      1. What are the top five Malanobis scores?
      2. What is the cut off for Mahalanobis (list *df* and *X2*)?
      3. Delete any outliers.
   4. Multicollinearity – include a correlation table of the CVs.
      1. Are they too highly correlated?
   5. Normality
      1. Show skew and kurtosis values for the DV.
      2. Include the multivariate normality chart.
      3. Is the data normal?
   6. Linearity
      1. Include the PP plot.
      2. Is the data linear?
   7. Homogeneity/Homoscedasticity
      1. Include the residuals graph.
      2. Is the data homogeneic?
      3. Is the data homoscedasticity?
2. ANCOVA
   1. Include the descriptives box (the marginal means at the end are easier, there are three of them).
   2. Include Levene’s test.
   3. Include the ANCOVA box.
   4. Include a correlation box between your CV and DV (so you can tell what covariate result means).
   5. Include your post hoc test (do TWO post hoc tests, even if your interaction is not significant). Include Cohen’s d.

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| Group 1 | Group 2 | t | p | d |
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1. Include a write up. Be sure your write up includes the following:
   1. Brief write up of the variables
   2. Assumptions checks
   3. Descriptive statistics (you can make a graph)
   4. Inferential statistics (the ANCOVA, the *F* values)
   5. Post Hoc tests
   6. Effect sizes