

## Statistics Assignments Using Excel®

### Assignment #9: One-Way Between Groups ANOVA

A researcher conducts an experiment to compare the effectiveness of different therapies for depression. Participants diagnosed with depression are randomly assigned to one of four groups: Control (no therapy provided), antidepressant medication (SSRI), cognitive-behavioral therapy (CBT), or a combination of medication and cognitive-behavioral therapy (SSRI+CBT). The DV is depression severity after 4 weeks, with higher scores indicating the presence of more depressive symptoms.

<u>SSRI</u>	<u>CBT</u>	<u>SSRI+CBT</u>	<u>Control</u>
11	7	9	12
5	9	6	7
9	6	7	11
7	11	9	9
6	7	5	6
9	6	8	8
11	9	6	11
10	8	4	10
8	7	8	12
9	9	9	9

Is there a statistically significant difference between the groups? With  $\alpha = .05$ , perform a one-way between groups ANOVA to find out.

1. Perform the ANOVA in Excel by creating your own formulas and with the FDIST function to determine  $p$ . Create your own full summary table.
2. Compute the effect size (eta squared).
3. Create either a bar graph comparing the means of the four groups (including standard error bars) or a box-plot display comparing the four groups.
4. Insert a textbox reporting your statistical and research conclusion.
5. Do a final save and submit your work.

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Microsoft Excel is a trademark of the Microsoft group of companies.

The following textbook contains detailed instructions for using spreadsheets in an introductory statistics class:  
Tagler, M. J. (2009). *Understanding basic statistics with spreadsheets*. New York, NY: Pearson Custom.