STAT550 Final Project (Individual)

(Due: Thursday, April 22, 2021, upload to Canvas by midnight)

For the case described below, write a comprehensive consulting report to a non-statistician client. Your report should be no more than 10 pages, including figures and tables but excluding Appendix. The requirements and evaluation criteria are the same as your group project, but this is an individual project. **Each student should work on this project <u>independently</u>. You should not discuss with anyone else.**

Case description

This study investigates changes in subjects' mental distress over time in an intervention group and a control group. Mental distress in subjects were measured at baseline (month=0), 3, 6, 18, and 60 months, based on their answers to questionnaires. All subjects are randomly assigned into two groups: a treatment/intervention group and a control group. The Global Severity Index (GSI), which is one of the most sensitive indicators of mental distress, is used to measure subjects' distress levels, with a higher GSI score indicating a higher level of mental distress. Other variables are also used to measure subjects' distress or depression levels and other characteristics of the subjects. *The dataset and its description are posted on Canvas (variables not described can be ignored).*

The main objectives of the study are to compare the treatment effect on reducing mental distress (GSI) compared with the control group, to study how subjects' mental distresses change over time, and to investigate whether the changes in mental distress over time can be partially explained by the treatment and other variables (e.g., gender and education).

Statistical questions:

1. Do subjects' mental distresses in each of the two groups decrease significantly over time?

2. Is there a significant difference in subjects' mental distress between the treatment and the control group? In other words, is the treatment effective?