

# 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 independently.** **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?