

Case 13: Effectiveness of a Stress-Reduction Program

A health researcher evaluates a stress-reduction program designed to help individuals manage stress more effectively. The program includes mindfulness exercises, physical activity, and cognitive-behavioral techniques. The researcher collects data from 142 volunteers on stress levels before and after the program using a standardized stress assessment tool with stress scores range from 0-100, with higher scores indicating more stress. Due to incomplete participation, there are 55 participants completed both before and after measurements, 39 participants completed only before measurements, and 48 participants completed only after measurements. The objective is to assess whether the stress-reduction program is effective in reducing stress levels. ([download data](#))

Initial Questions

1. What are the research objectives?
2. What are the statistical questions?
3. What is the response variable, and what is the data type of the response variable?
4. What are the explanatory variables of interest?
5. Are there covariates?
6. What is the population of interest?
7. What is the subject, and what is the number of distinct subjects?
8. Are there subject-level data?
9. Are response variables dependent (repeated measures / clustered subjects)?
10. Are the subjects selected randomly?
11. Are the subjects randomly assigned to different groups?

Initial Thoughts