

PSY 653 Module 3: Mediation

The following activity will use the datafile “slpdata.csv.”

Description of the dataset:

A team of sleep researchers sought to study the effects of a 6-week sleep intervention aimed to improve participant's sleep hygiene. Sleep hygiene encompasses a variety of practices and habits that are necessary to have good nighttime sleep quality and full daytime alertness. The team formulated three different versions of the intervention. The first version (condition 1) provided participants with a self-help book on the topic of sleep hygiene. The second version (condition 2) brought participants together once per week in groups of 10-12 to teach the principles of sleep hygiene in a classroom setting. The final version (condition 3) also used the group-based classroom setting of condition 2, but in addition, each participant's partner was invited to also take part in the group sessions. Six-hundred male and female adults living with an intimate partner and suffering from a sleep disorder were recruited to take part in the study, the participants were randomly assigned to one of the three conditions. The data set includes the following variables:

- sex: 1=male, 2=female
- age: Participant's age in years
- anxiety: Participant's level of general anxiety measured at the start of the study via a multi-item scale. The scale (average of all items) ranges from 1 to 7, where a higher score indicates a higher level of anxiety.
- prior: An indicator of whether or not the participant had previously participated in some type of sleep intervention, 1 = yes, 0 = no.
- hygiene: Participant's sleep hygiene at week 6. It ranges from 0 to 10, and higher means better sleep practices.
- support: Participant's perception that their partner is supportive of their struggles with sleep and their efforts to improve sleep. It is a multi-item scale that ranges from 1 to 5, where higher indicates more support.
- sleep: Participant's average sleep efficiency during the month following the intervention, calculated as time spent in bed asleep (minus all the awakenings), divided by the total time spent in bed. It is expressed as a percentage.
- lifesat: Participant's sense of life satisfaction measured 30 days after the completion of the intervention. It is a multi-item scale that ranges from 1 to 7, where a higher score indicates more satisfaction.
- cond: Treatment condition, 1 = self-help, 2 = group-based intervention, 3 = group-based plus partner participation.

1. Create a new R notebook and load the following libraries: psych, ppcor, mediation & tidyverse (Note: you may need to download the mediation package)
2. Read in the datafile “slpdata.csv”
3. Reduce the dataset to the following variables: sleep, hygiene & lifesat.
4. Using this data, you will be testing the hypothesis that sleep efficiency (Mediator) mediates the relationship between sleep hygiene (IV) and life satisfaction (DV).
5. Examine the correlations among the variables
 - i. Using the Baron & Kenny criteria, is it even plausible that a mediated relationship might be present? Describe your reasoning in answering this question.
 - b. Examine the semipartial correlation between hygiene and life satisfaction controlling for sleep efficiency.
 - i. Using the Baron & Kenny criteria, is it even plausible that a mediated relationship might be present? Describe your reasoning in answering this question.
 - c. Use the mediate function in the “psych” package (psych::mediate). To evaluate the mediation hypothesis
 - i. What is critical to look at in this output?
 - ii. What conclusions do you reach about mediation? Is there evidence of partial mediation between our variables?
 - d. Use the mediate function in “mediation” package (mediation::mediate)
 - i. What is critical to look at in this output?
 - ii. What conclusions do you reach about mediation? Is there evidence of partial mediation between our variables?