Spring 2021

Answer the following questions using Jamovi. Type your reports in MS Word (or equivalent), ██

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ALWAYS ADHERE TO THE APA STYLE. Remember that 10% of your final grade depends on it.

Each hypothesis is worth 20 points.

The non-Jamovi question is worth 10 points.

Note: Assume linearity and homoscedasticity, as scatterplots might be confusing to read and analyze. Paste the scatterplot and title it anyway.

A health psychologist is working on a new research, studying the chance of recovering from COVID-19.
Based on her consultations with medical doctors and other scientists, and upon an extensive literature review, she chose red blood cell count (RBC count) and number of hours spent on a ventilator at the hospital as predictors of the chance of recovering from COVID-19. She also wanted to refute the claim that older people cannot recover from COVID-19.

Hypothesis 1: age will **not** be a significant predictor of chance of recovering from COVID-19.

Hypothesis 2: RBC count and number of hours spent on a ventilator will **each** significantly predict chance of recovering from COVID-19.
Hypotheses 1 and 2 can be answered using one Jamovi procedure.

Upon analyzing her initial results, she was surprised at one of her findings. Therefore, she consulted with her medical doctor friends yet again, and she realized that volume of oxygen in one's body (VO2) is a covariate that she needs to consider. She thus formulated her third hypothesis.

Hypothesis 3: VO2 will mediate the relationship between RBC count and chance of recovering from COVID-19.

Non-JAMOVI question: which one of her initial findings (hypotheses 1 and 2) do you think was surprising for her, and how does the mediation (hypothesis 3) explain that initial finding?

As she happily shared her results with her medical friends, one of the doctors pointed out that those with high VO2 should actually not be on ventilators, since their levels of oxygen are sufficient, and ventilation wouldn't actually make any difference in their case. His concerns were of an economic and logistic nature, as there are not enough ventilators in most hospitals, and overwhelming them is a difficult crisis to solve.

Our health psychologist decided to put this assertion to the test, as she came up with her fourth hypothesis.

Hypothesis 4: number of hours spent on a ventilator will predict chance of recovery from COVID-19 at the low and average levels of VO2, but not at the high levels of VO2.