

Week Six Homework Exercise

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In a study at the Ohio State University Medical Center, doctors investigated the association between ICU acquired paresis (ICUAP) (or muscular weakness) and subject's admission SOFA score dichotomized at 11 (*sofa11*) (0 for less than 11 and 1 for 11 and greater).

Specifically the investigators wanted to determine if handgrip strength (*max_grip*) could be used as a surrogate for ICUAP. The investigators believed that the number of days the patient was mechanically ventilated (*MV_days*) could affect the relationship between weakness and dichotomized SOFA.

Use the [ICU acquired weakness](#) dataset to answer the following exercises. You can also find this data within this [CSV file](#).

Exercise One

Using a two-sample t-test, determine whether the two SOFA Score groups differ significantly with respect to ICUAP (as measured by *max_grip*).

Exercise Two

Perform the same analysis from Exercise One (i.e., 2 sample t-test) using a regression analysis.

Exercise Three

Using a single model determine the regression of *max_grip* on *MVdays* for each of the two SOFA score groups.

Exercise Four

Test whether the two SOFA cohorts differ significantly, controlling for mechanically ventilated days.

Exercise Five

Determine and Compare

Test whether the two SOFA cohorts have the same slope. Do they have the same intercept? Are they coincident? Use the [homework forum](#) to share your findings.

You can download all homework assignments for week 6 [here](#)

For help and answers to this week's exercises, click the button below to visit the solutions page.

[Solutions Page](#)

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