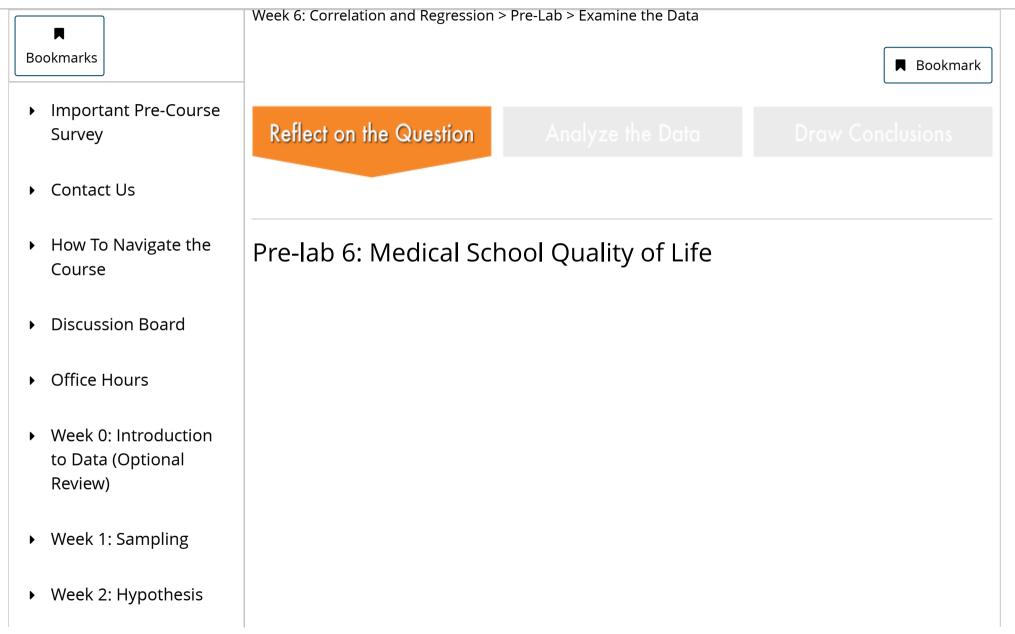


### UTAustinX: UT.7.20x Foundations of Data Analysis - Part 2



Testing (One Group Means)

- Week 3: Hypothesis Testing (Two Group Means)
- Week 4: Hypothesis Testing (Categorical Data)
- Week 5: Hypothesis Testing (More Than Two Group Means)
- ▼ Week 6: Correlation and Regression

### Readings

Reading Check due May 03, 2016 at 17:00 UTC

#### **Lecture Videos**

Comprehension Check due May 03, 2016 at 17:00 UTC

**R Tutorial Videos** 

Pre-Lab



In a 2015 study, Tempski and associates examined a measurement they called Quality of Life among medical school students in Brazilian medical schools. They borrowed measurement scales from the World Health Organization, the Dundee Ready Education Environment Scale, and the Beck Depression Inventory to assess the dependent variable in potential relation to a number of predictor variables.

Pre-Lab due May 03, 2016 at 17:00 UTC

#### Lab

Lab due May 03, 2016 at 17:00 UTC

#### **Problem Set**

Problem Set due May 03, 2016 at 17:00 UTC

# Primary research questions

- 1) Can you confirm the claim that Beck Depression Inventory score is a significant predictor of Overall Quality of Life among students enrolled in the Clinical Sciences program?
- 2) For students enrolled in the Clinical Sciences program, examine the effects of DREEM: Social Self Perception, DREEM: Academic Self Perception, Resilience, BDI, and Age on Med School Quality of Life?

(3/3 points)

### **Check the Data**

Let's begin by examining our data in R.

- 1. Open RStudio. Make sure you've installed the SDSFoundations 1.4 package.
- 2. Type library (SDSFoundations). This will automatically load the data for the labs.
- 3.Type res <- TempskiResilience. This will assign the data to your Workspace.
- 4. Look at the spreadsheet view of the data to answer the following questions.

**Alternatively**, you can use the following steps in the "Importing a Data Frame" R tutorial video, and use the TempskiResilience.csv file. (Right-click and "Save As.") Make sure to **name** the dataframe "res" when importing.

- 1. Open RStudio.
- 2. Click on the "Import Dataset" button at the top of the workspace window. Choose "from text

file."
3. Click on the location of the TempskiResilience.csv file you just downloaded.
4. Click on the TempskiResilience.csv file. Then, click Upload.
5. Look at the spreadsheet view of the data to answer the following questions.
1a. How many observations are in the intial dataset?  1350  Answer: 1350
$oxed{1350}$
1b. The first listed student with a Med School Quality of Life score of 10 is how many years old?
21
Answer: 21
21
1c. Of the first 10 participants, how many have a Med School Quality of Life over 5?
7
Answer: 7
7
Click here for a video explanation of how to answer this question.

You have used 1 of 1 submissions

(4/4 points)

# **Check the Variables of Interest**

Let's find the variables we need to answer the question.

2a. Which variable tells us the Med School quality of life?

The variable name in the dataset is MS.QoL • Answer: MS.QoL , which is a

2b. Is there just one predictor variable in the model for the second research question?

2c. How many variables will be used as predictors in the model for the second research question?

5 **▼ ✓ Answer:** 5

Click here for a video explanation of how to answer this question.

You have used 1 of 1 submissions

(2/2 points)

## **Reflect on the Method**

Which method should we be using for this analysis and why?

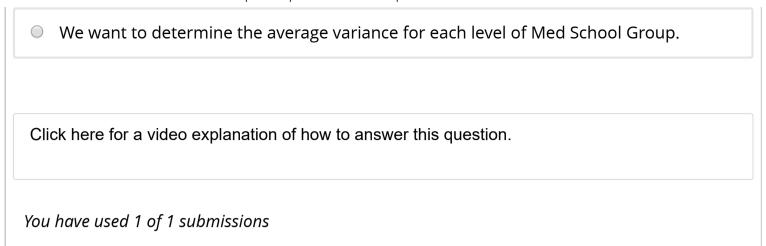
3a. We will use Multiple Linear Regression to answer our Second Primary Research Question. Why?

- We want to determine if the category of Med School changes the Quality of Life.
- We want to examine multiple predictors of a single quantitative outcome.
- We have just two quantitative variables and want to examine their relationship.

3b. For both question models, we'll need to examine diagnostic plots. Why?

- We want to confirm the mean of the outcome variable.
- We need to assess the assumptions of the model, and look for potential outliers.





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