Module 3 Lab: bivariate and multivariate analysis

BIOSTAT 213: Introduction to Computing in the R Software Environment

Wednesday, January 30, 2019

Save your code in a script file. I suggest adding labels and notes to this script file as comments. You may work in groups of 2–3.

1. If you have not already, import `nhanes.csv` into R, using `read.csv()`.
2. Use ggplot2 to create a scatter plot of systolic blood pressure (`bpxsy1`) versus age (`ridageyr`). Include the simple linear regression line in the plot.
3. Use ggplot2 to create a scatter plot of systolic blood pressure (`bpxsy1`) versus age (`ridageyr`). Include the quadratic regression line in the plot.
4. Fit a linear model, with systolic blood pressure as the outcome and quadratic adjustment for age. Obtain the coefficient estimates and the corresponding 95% confidence intervals.
5. Fit the model above, adding adjustment for gender (`gender`). Obtain the coefficient estimates and the corresponding 95% confidence intervals.
6. Use the model above to predict systolic blood pressure for (i) a 62-year-old male, (ii) a 36-year-old female, (iii) a 50-year-old male, and (iv) a 45-year-old female.