Assignment01

library(ggplot2)  
library(kableExtra)

mydata <- read.csv("../data/mydata.csv")

# Question 1

The data set comprises longitudinal data from a sample of 227 participants suffering from insomnia complaints who completed repeated assessments of insomnia severity, anxiety, and depression at three distinct occasions: baseline, 6 weeks (post-treatment), and 6 months (follow-up). Each participant was randomized to one of two therapy groups or the control group: (a) ACT-I; *n* = 76, (b) CBT-I; *n* = 76, or (c) Wait List; *n* = 75. In total, there were 173 (76%) female participants and the mean age was 40.6 years (SD = 10.2).

# Question 2

For the time varying variables we can look at Insomnia Severity. Higher scores mean more insomnia symptoms.

# Question 3

sel\_data <- mydata[, c("record\_id", "redcap\_event\_name", "insomina\_severity")]  
  
  
mydata2\_wide <- reshape(sel\_data,  
 timevar = "redcap\_event\_name",  
 idvar = "record\_id",  
 direction = "wide")  
  
psych::describe(mydata2\_wide[, c(2,3,4)]) |>   
 kable(digits=2)

vars

n

mean

sd

median

trimmed

mad

min

max

range

skew

kurtosis

se

insomina\_severity.1

1

227

19.30

4.08

19

19.37

4.45

8

28

20

-0.15

-0.51

0.27

insomina\_severity.2

2

199

12.38

5.82

12

12.29

5.93

0

28

28

0.13

-0.40

0.41

insomina\_severity.3

3

191

12.19

6.13

12

12.01

7.41

1

28

27

0.24

-0.72

0.44

cor(mydata2\_wide[, c(2,3,4)], use = "complete.obs") |>   
 kable(digits=2)

insomina\_severity.1

insomina\_severity.2

insomina\_severity.3

insomina\_severity.1

1.00

0.44

0.51

insomina\_severity.2

0.44

1.00

0.77

insomina\_severity.3

0.51

0.77

1.00

mydata |>   
 tidyr::pivot\_longer(cols = insomina\_severity:anxiety,  
 names\_to = "symptom", values\_to = "score") |>   
 dplyr::filter(symptom == "insomina\_severity") |>   
 ggplot(aes( x = redcap\_event\_name, y = score, group = record\_id)) +  
 geom\_point() +   
 geom\_line() +  
 labs(x = "Time", y = "Insomnia Severity") +  
 scale\_x\_continuous(breaks = c(1,2,3)) +  
 theme\_minimal()

