R Training Summer 2025

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Contents

Psychology @ Royal Holloway University of London R Training

Summer/Autumn Sessions 2025

Chapter 1

Session 1: Starting with R

1.1 Download Slides and Data Files

Slides: here.

Data file: height.csv here.

Data file sleep.csv here.

Data file: intervention.csv here.

1.2 Code Used Below:

This is the code used from slide 42 onwards:

1.2.1 Install and Load Package:

```
install.packages("tidyverse") # install only if needed
library(tidyverse) # always load the package before starting
```

Code for the first data file:

```
data <- read_csv("height.csv")

print(data)
view(data)
```

1.2.2 Calculating Descriptive Statistics

```
rm(data) # will remove the object called "data".

data <- read_csv("sleep.csv") # new data set
```

Explore the new data set:

```
head(data) #view the first few rows
summary(data) #quick summary of the data set
names(data) #check variable names
```

Count and pipe %>%:

```
data %>%
    count(condition)
```

Means and Standard Deviations:

```
descr <- data %>%
    summarise(mean_age = mean(age),
              sd_age = sd(age),
              mean_change = mean(change))

view(desc) # view the descriptives
```

Add standard deviation for `change`:

```
descr <- data %>%
    summarise(mean_age = mean(age),
              sd_age = sd(age),
              mean_change = mean(change)
              sd_change = sd(change))

view(desc) # view the updated descriptives
```

Using `group_by()`:

```
descr <- data %>%
  group_by(condition) %>%
    summarise(mean_age = mean(age),
              sd_age = sd(age),
              mean_change = mean(change)
              sd_change = sd(change))
```

1.2.3 Distributions

Histogram:

```
ggplot(data, aes(x = change, fill = condition)) +
      geom_histogram(colour = "black")
```

- facet_wrap()

```
ggplot(data, aes(x = change, fill = condition)) +
      geom_histogram(colour = "black") +
      facet_wrap(~ condition)
```

Density Plot:

```
ggplot(data, aes(x = change, fill = condition)) +
      geom_density(alpha = .5)
```

- facet_wrap()

```
ggplot(data, aes(x = change, fill = condition)) +
      geom_density(alpha = .5)
      facet_wrap(~ condition)
```

Box Plot:

```
ggplot(data, aes(x = condition, y = change)) +
      geom_boxplot(width = .4) +
      theme_classic()
```

1.2.4 Wide-form to Long-form Data:

```
Wide_data <- read_csv("intervention.csv")

view(wide_data)
```

```
names(wide_data)

long_data <- wide_data %>%
    pivot_longer(cols = c(pre, post),
    names_to = "time_point",
    values_to = "sleep_score")
```

Chapter 2

Session 2: Correlation and Regression

Chapter 3

Session 3: t-Tests and ANOVAs