R BASICS: DESCRIPTIVES

Let's do some stats.

Descriptive statistics are just that:
Methods for describing the characteristics of your data set.

Mean

Count

Variance/SD

Min/Max

Range/IQR

Median

Mode

BASIC DESCRIPTIVES

- Mean: `mean(x)`

- Variance: `var(x)`

- Standard deviation: `sd(x)`

- Median: `median(x)`

- Maximum: `max(x)`

- Minimum: `min(x)`

- Quantile: `quantile(x, q)`
  - where q is between 0 and 1, e.g. 1st quartile `q=0.25`

- Interquartile range: `IQR(x)`

```
> test <- c(1, 2, 3, 4, 5, 6, 7)
> mean(test)
[1] 4
> quantile(test, 0.75)
75%
5.5
```

BASIC DESCRIPTIVES CHEAT SHEET

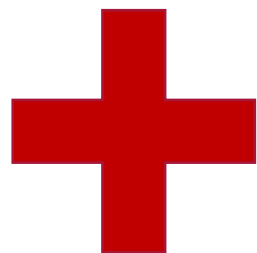https://statsandr.com/blog/descriptive-statistics-in-r/

DOING MORE WITH DESCRIPTIVES

- Typically we want to do more informative stuff.
- E.g. From a large table, we may want descriptives by grouped data (e.g. by **sex**, **pain/no pain** and **unilateral/bilateral** in an OA study)

Subject	Age	Mass	Sex	Pain	Bilateral	Score1	Score2
SUBJ1	21	45	M	Y	N	23	32
SUBJ2	33	54	F	Y	N	64	32
SUBJ3	24	67	M	N	NA	22	45
SUBJ4	26	43	F	N	NA	12	23
SUBJ5	21	65	F	Y	Y	44	64
SUBJ6	19	55	F	Y	Y	43	21
SUBJ7	34	34	M	Y	Y	26	32

latr-meetups

Base R + dplyr (tidyverse)

DOING MORE WITH DESCRIPTIVES

- Take advantage of powerful functions in dplyr (tidyverse):

    - `summarise()`
    - `mutate()`
    - `select()`
    - `relocate()`
    - `bind_rows()`

    - …and many others

DATA WRANGLING CHEAT SHEET

https://www.rstudio.com/wp-content/uploads/2015/02/data-wrangling-cheatsheet.pdf

INSTALLING PACKAGES

- To get and install a package for the first time, in the R console, enter:

    `install.packages("name_of_package")`

- E.g. tidyverse: `install.packages("tidyverse")`

- You only need to do this once.

- For multiple packages, use the `c()` function to combine several packages into a list so you can install them in one go:

    `install.packages(c("package1", "package2"))`

USING PACKAGES

- To use a package in a script, at the top of your script enter (with or without quotes):

```
library(name_of_package)
```

```
library("name_of_package")
```

- E.g. dplyr from tidyverse: `library(dplyr)`

- …or just load the entire tidyverse: `library(tidyverse)`

- You need to do this at the top of every script for which you need that/those package/s.

Try it yourself!

Play around with the code and data:

https://github.com/latr-meetups/latr/tree/main/code/basic_descriptives