Introduction to R software

Session III

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Objectives: The objectives of this lab are to perform statistical tests

A- Loading the transformed dataset

1. After launching the R software, use the drop-down menu to open a new R script for lab 3

2. Specify the working directory using the command **setwd()** if not correct, save the script using the drop-down menu.

3. During lab 2, you saved the transformed data set in a *.Rdata file, load it with the function **load()**.

4. Describe the dataset verifying if it is consistent with what you expect (similar to last week)

B- Hypothesis testing – the effect of sleeping in his/her own room on the sleep quality

1. You are willing to test whether there is an association or not between **sleeping quality categories** and **singleroom**?

   - Formulate the statistical hypotheses
   - Compute the contingency table
   - Choose the appropriate test to compare proportions. Have a look at the help page to find the function to use.

2. Compare mean sleep_quality between two groups of singleroom:
   - Formulate the statistical hypotheses, choose the appropriate test.
   - If needed, verify the conditions of application.
   - Perform the test and interpret your results

C- Hypothesis testing - the effect of watching tv after 6pm on the sleep quality

1. Describe the **watch_tv** variable (mean, standard deviation, median, quartiles_,_…) and draw the **watch_tv** distribution.

2. Create a new variable **watch_tv_group** with two levels: “1h30_OrLess”, “MoreThan1h30”
3. Describe this new variable
4. Describe **sleep_quality** by group of watching tv time, including the 95% confidence interval. Interpret the results
5. Draw the boxplot of **sleep_quality** by group of watching tv time specifying a main title. Interpret it.
6. Which is the appropriate test to conclude on the association between sleep_quality and watch_tv_group?
7. Find out how to perform such test in R and compute it after verifying conditions if any. Interpret the results