

## Introduction to R software Session V

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**Objectives:** The objectives of this lab are to perform univariate tests to search for determinants of lack of concentration at during a school day?

### A- Loading the transformed dataset

1. After launching RStudio and verify that you are in the right working directory using **getwd()** function call.
2. If you need to change the current working directory use either the drop-down menu or the **setwd()** function call with the appropriate path.
3. Open a new R script and save it as lab5.R using the drop-down menu.
4. As in lab 4, we will be using the SleepQualityData.Rdata object you created and saved in lab 4. This object should be in your current working directory and you should be able to load the data using the **load()** function.
5. Load the data and verifying that it is consistent with what you expected. This dataset should include the concentration\_mark variable. (If not download the updated dataset from REAL)
6. Using the concentration\_mark variable, create a new variable **concentration\_level** with two levels: "concentration\_above\_average", "concentration\_below\_average"

### B- Descriptive statistics

1. Describe the **concentration\_mark** variable using classical statistical parameter(s) and graphic(s) by group of students' genders
2. Describe the **concentration\_mark** variable using classical statistical parameter(s) and graphic(s) by group of **watch\_tv\_group** levels ("1h30\_OrLess", "MoreThan1h30")
3. Describe the **concentration\_level** variable using classical statistical parameter(s) and graphic(s) by group of **watch\_tv\_group** levels ("1h30\_OrLess", "MoreThan1h30")
4. Describe the **concentration\_level** variable using classical statistical parameter(s) and graphic(s) by group of **perceived health status**

**C- Is there an association between school concentration and the suspected covariates?**

1. We consider that a watching tv as an impact on school concentration. Using the two variables describing concentration at school test whether watching tv as an impact. (remember to formulate the null and alternative hypothesis and verify the potential assumptions)
2. We also wonder if the student's gender has an impact on the concentration mark (variable in its quantitative form).
3. Finally we would like to test whether the perceived health status has an impact on the concentration level (variable in its qualitative form).