

**Missing data: comparison of methods**Susana Rafaela Guimarães Martins<sup>1</sup><sup>1</sup>Universidade de Vigo e Instituto Politécnico de Viana do Castelo.**ABSTRACT**

Missing data is very common in statistical data and various techniques are used for its study. In the database under study, referring to children from schools in the municipality of Viana do Castelo in Portugal, several data are missing. This database was collected longitudinally in five moments between 1997 and 2006. The recorded variables were physical and morphological, and the main objective was to relate physical performance with obesity levels. Due to the long collection period and the children's change from one school to another, some data cannot be collected, which resulted in missing data.

In order to find the best way to study this data, some methods traditionally used for missing data analysis have been analyzed: multiple imputation methods, inverse probability weight, as well as full data analysis. Multiple imputation methods use recorded data to calculate missing values. The inverse probability weight method calculates the statistics of a pseudo-population. That is constructed by assigning more weights to the observations that are similar to each other in terms of their covariates, improving the balance of covariates. The complete cases method contemplates, as its name implies, the exclusive analysis of cases that are complete, that is, individuals who do not have missing data for any variable.

The presentation will show the exploration of these methods by means of basic examples and try to determine which is the most efficient and appropriate for the data.