

TEACHING THE MEASUREMENT PROCESS IN BIostatISTICS

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Numerical symbols are commonly used in the measurement process of both objective, quantitative and subjective, qualitative variables. Hence, numerical response values can have different mathematical properties. Therefore attention must be paid on the measurement process that is behind the numerals before choice of statistical methods for analysis. Many statistical books both applied and theoretical, focus on statistical methods for quantitative variables in at least interval measurement level.

The aim is to put light on the importance of discussing the measurement process behind the numerical labels both among statisticians and among the applied consumers of statistics. Some pedagogical approaches in teaching statistician colleagues and scientists in medical and behavioural sciences are presented.

The main topics are:

- * the measurement process including different ways of operationalisation of variables
- * properties of different measurement levels
- * what is the response value of a variable measured by a multi-scale instrument?
- * quality assessment of quantitative (true numerical) and of quantified (non-numbers) responses
- * the impact of the measurement process on the choice of adequate statistical methods.