Editorial

Biostatistics

Statistics is the science whereby inferences are made about specific random phenomena on the basis of relatively limited sample material. The field of statistics can be subdivided into two main areas: mathematical statistics and applied statistics. Mathematical statistics concerns the development of new methods of statistical inference and requires detailed knowledge of basic mathematics for its implementation. Applied statistics concerns the application of the methods of mathematical statistics to specific subject areas such as economics, psychology and public health.

Biostatistics is a branch of applied statistics that concerns the application of statistical methods to medical and biological problems. Nowadays much concern is devoted to hospital utility statistics, audit, resource allocation, vaccination uptake, incidence and prevalence of different diseases, assessment of drugs and medical diagnostic tests. Bio-statistical methods help us to analyze the obtained data from different researches, such as clinical trials, systematic reviews, genetic and proteomics surveys, and epidemiologic studies.

Depending on the type of response and explanatory variables under study, we can use different statistical approaches for analyzing the available data. In this context, two traditional methods exist: descriptive and analytic statistics. Descriptive statistics consists of three main methods: frequency tables, figures, and statistical indices. Analytic statistics includes classical univariate approaches such as chi-square, independent and paired samples t, ANOVA, correlation coefficients and non-parametric tests. In addition, for describing the simultaneous effect of several independent variables on a single or multivariate outcome, statistical modeling approaches such as linear and non-linear regression models can be utilized. To present more accurate and efficient statistical methods for analyzing different types of data, the descriptive and analytic approaches are developing rapidly by the statisticians. These new methods can be found in recently published statistical and bio-statistical journals and books.

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