

Biostatistics

Statistics is a field of study concerned with collection, organization, summarization and analysis of data.

Biostatistics is the application of statistics in medical research.

Terms in Biostatistics

- **Data:** – all the information we collect to answer the research question
- **A variable:** It is a characteristic that takes on different values in different persons, places, or things. For example: - heart rate, the heights of adult males, the weights of preschool children, the ages of patients seen in a dental clinic.
- **Population:** – is the entire group of individuals you want to study
- **Sample:** – a subset of the population for which data are collected

It is helpful to divide variables into different types; as different statistical methods are applicable to each. The main division is into qualitative (or categorical) or quantitative (or numerical variables).

Types of variables:

1- Quantitative variables: It can be measured in the usual sense. For example: - the heights and the weights.

2- Qualitative variables: Many characteristics are not capable of being measured. Some of them can be ordered (called ordinal) and Some of them can't be ordered (called nominal). For example: - classification of people into socioeconomic groups, hair color

Types of quantitative variables:

1-Discrete variables: is characterized by gaps or interruptions in the values that it can assume.e.g: The number of daily admissions to a general hospital.

2- Continuous variables: can assume any value within a specified relevant interval of values assumed by the variable. For example: - Height, - weight, - skull circumference. No matter how close together the observed heights of two people, we can find another person whose height falls somewhere in between.

Types of qualitative variables:

1-Nominal: As the name implies it consist of “naming” or classifies into various mutually exclusive categories for example: - Male - female - Sick - well - Married – single – divorced.

2- Ordinal: Whenever qualitative observation Can be ranked or ordered according to some criteria. For example: - Blood pressure (high-good-low) - Grades (Excellent – V.good –good –fail). The spaces or intervals between the categories are not necessarily equal.