BIOSTATISTICS

DATA

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CHAPTER 2

- **Data**: Any record, either in the descriptive form or in the symbolic form from an observation, or an experiment or a series of experiments .
- Types of data:
- **Primary data**
- **Secondary data**

Types of data:

Primary data: data collected by investigator from personal experimental studies or measurements

It is the original, first-hand information collected by investigator

Eg: data collected from a locality on how many couples have single girl child

- **Secondary data**: Data obtained from secondary sources like journals, magazines, newspapers, research papers etc
- They are already collected by some other persons
- These data are already in readymade form such that they can be analyzed and interpreted

- **Qualitative data**: are those data which cannot be measured. Eg: softness of skin, colour of eyes, etc
- **Quantitative data**: are those data that can be measured. Eg: height, weight, etc

- **Methods of data collection**
- Data collection is the first step in statistical studies
- Investigator adopts different methods for data collection
- **Census**
- **Sampling**
- These two are mainly used for primary data collection

- **Census method**
- Data is collected from all the individuals or items that are connected with the study
- For eg: to study the usage of social media among high-school students of a school, all high-school students should be included in the study

- **Advantages:**
- Highly accurate data
- More true
- More reliable results
- Possibility of any type of bias is minimized
- **Disadvantages:**
- More time and energy consuming
- Require organisational skill and large no: of investigators
- Cannot be applied to all situations

- Essentials of a good sample
- Should have all characteristics of the population
- Should be homogeneous and true representative of population
- No: of samples should be adequate to make the result reliable
- All individual items in the sample should be independent of each other

Types of sampling methods

Random sampling

Nonrandom sampling

Types of random sampling:

Random sampling

simple random sampling

stratified random sampling

multistage sampling

Cluster sampling

Systematic sampling

- **Types of sampling methods**
- **Random sampling**
- A random sample is a sample selected in such a way that every individual item in the population has equal chance of being included
- Types of random sampling:
- A) **simple random sampling:** samples are chosen at random and each member of population has equal chance of being selected in the sample

- **Sampling method**
- Sample is a small portion of a population selected to study
- Sample is true representative of whole population
- Eg: to study the effect of mercury in 100 fishes, if only 25 are studied, these 25 fishes constitute a sample

- B) **stratified random sampling**: done in heterogenous population, for eg: to study the average height of females and males in a particular locality
- C) **multistage sampling**: sampling is carried out in different stages using smaller and smaller sampling units at each stage
- D) **Cluster sampling**: total population is divided to small groups or clusters and simple random sample of each group is selected

- **Systematic sampling**: is done in a large and heterogenous population
- Sampling is done from a particular systematic position, for eg: if a person want to investigate Hb content of 100 individuals, individuals are arranged in a particular order, then every 10^{th} individual is selected for the study

THANK YOU…