

BASIC STATISTICS IN MEDICAL PRACTICE

Pages with reference to book, From 27 To 27

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INTRODUCTION

Statistics is a multidisciplinary subject having use in almost all the fields and branches of sciences, commerce, and humanities. Defining statistics is the most difficult task, but following definition is most comprehensive and versatile¹.

“It is a Scientific method of collection compilation, presentation, analysis and interpretation of observation and data”.

Basic aims of statistical analysis is to represent statistical data and compare it with relevant available results. Representation of statistical data is done through various quantitative values.

STATISTICAL TERMS

One cannot appreciate the importance of statistical tests unless the meaning of these terms is understood^{2,3}.

Mean:

It is defined as the sum of values recorded in a series of observations divided by the total number of observations.

Geometric mean: It is defined as the nth root of the product of n items. If a, b, c z are n items then G.M. is given by: (a, b, c)

Median:

is the Centre value of series of observations, when the observations are arranged in ascending order.

Median, therefore, divides the distribution into two halves in such a way that half of the observations fall below the median and half lie above it. When the number of observations are even, the mean of the centre values is usually taken.

Mode:

is defined as the value which is represented repeatedly in a distribution. It is thus the most frequent or the most popular value.

Examples of Mean, Median and Mode:

We write blood Qressure (systolic) of 7 patients as: 110, 115,95, 100,110, 120,90.

Therefore:

1. Total B.P. of 7 patients (EX) = 740—740 Mean(X) = 7 = 105.7.
2. Arrange the data in ascending order: 90, 95, 100, 110, 110, 115, 120 Median is centre (4th) value 110
3. Mode is 110 (as it occurs two times).

ADVANTAGES AND DISADVANTAGES

Mean:

It is the most commonly used average which is easily calculated and understood. Its value is greatly affected by the extreme values.

Geometric mean:

Some times mean fails to give a satisfactory average or the average is too big in comparison to the data. Geometric mean is used in such situations, but its computation is useless whenever the data has either a zero or negative value.

Median:

It is easily calculated and is not affected by the extreme values, it is not capable of further mathematical

treatment.

Mode:

It is easily understood and like median it can be spotted by inspection. It is also useful for non quantitative data, but it is not capable for further mathematical treatment.

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