



UNIVERSITY OF JORDAN  
FACULTY OF MEDICINE  
BATCH 2013-2019



# EPIDEMIOLOGY & BIostatISTICS

Slides  Sheet  Handout  other.....

**Lecture # 1**

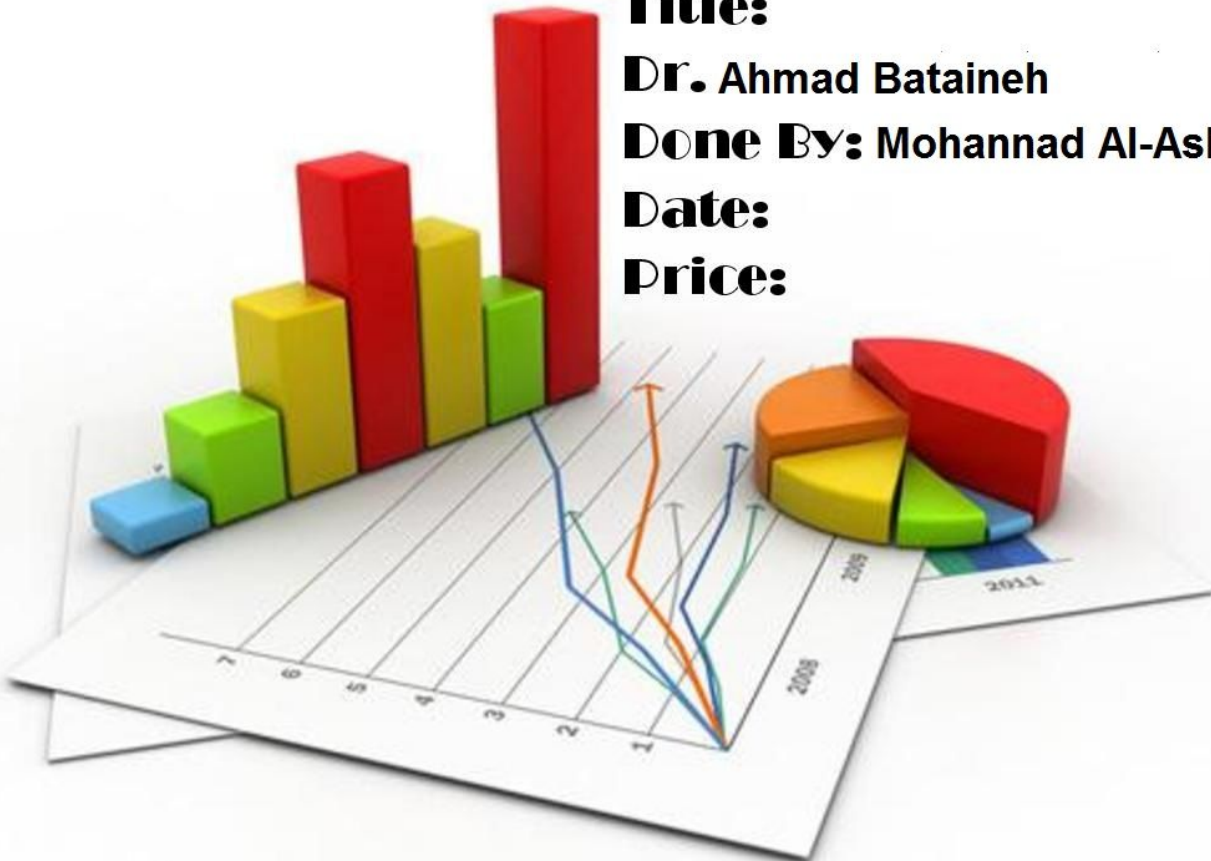
**Title:**

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**Date:**

**Price:**



DESIGNED BY NADEEN AL-FREIHAT

## بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Hello everybody, I'm Mohannad Al- Ashhab and this is my first sheet. Dr. Ahmad mentioned everything in the slides, also he repeated things and added some notes so study slides then read my sheet. This sheet is very very easy and it covers slides(1-34). Please forgive me for any mistakes.

\*Slides 1+2+3+4+5:

\*slide 6:Data in biology and medicine field is called (biostatistics) while in other fields like agriculture, education ,etc is called (statistics).

\*slide 7:measurements include: weight, height, skull circumference for children, etc.

\*slide 8

\*slide 9: getting information from the internet is an example on external sources.

\*slide 10:Example on survey (مسح): I can ask students questions about certain things and when they answer these questions, I can get their opinion or feedback and do statistical analysis using SPSS.

\*slides 11+12

\*slide 13: Quantitative: can be measured exactly and it depends on concept of (amount) like height, weight and age.

Qualitative: cannot be measured and it depends on concept of (attitude) or (attribute) like social classes (high class, middle class, low class) so it can be ranked.

**\*slide 14:** Discrete values: there's no continuity, and the values cannot be fractions (always integer numbers) for example the number of daily admissions to a general hospital. We can't say 277.8 persons came to the hospital yesterday.

Continuous values: can be fractions. For example weight, height and skull circumference. I can say my weight is 72.6

**\*slides 15+16:** population is a large number of values, for example the weights of all students in university of Jordan while sample is a part of population for example the weights of only a fraction of these students.

**\*slides 17+18:**

**\*slide 19:** epidemiologically: dependent (outcome variable) and independent (study variable). To distinguish between dependent and independent let us see this equation:

$$y=5 +4x + 3z$$

X: weight

Z: height

X and z ( study variables) determine the value of y (outcome variable). So they are predictors of y, and y is a dependant variable of x and z as it changes according to them. While x and z are independent variables of y.

- Subjective data like headaches and colic differ from one person to another and so is their severity: low, severe, etc.

\*slides 20:nominal data can't be put in order, but can be put in categories. These categories can be either dichotomous (having two choices only) like either males/females or yes/no, or they can be multichotomous (more than two choices) like the blood groups (A,O,B,AB).

ordinal are things that can be put in order, either ascending or descending [high → middle → low]

\*slide 21+22+23+24+25

\*slide 26:descriptive measures have two types :

1- measures of central tendency, these include the mean, median and mode.

2- measures of dispersion(variability, scattering)(تشتت), how much are the values away from the mean.

\*slide 27: statistic is a measure computed from the data of a sample, while parameter is a measure computed from the data of a population.

**\*slide 28**

**\*slide 29**:to calculate the mean we calculate the sum of all the values included and divide that over the number of the samples.

a student asked what is the difference between the population mean and the sample mean?

Dr. said: the population mean is usually unknown because population is a large number of values so we use the sample mean to predict the population mean.

**\*slide 30** :extreme values (outliers) can be either too large or too small and they can distort the mean by increasing or decreasing it so its recommended to get rid of them before the statistical analysis.

\*slide 31 before calculating the median, we have to make sure to order the data first from lowest to highest (Ascending)

**\*slides 32+33+34**

I'm so sorry for any mistakes

Your colleague: Mohannad Al-Ashhab