Biostatistics

Consist of

- Collection
- Estimation
- Presentation of data

Break to
1. Descriptive (clarify data, for purpose of conclusion)
   organizing, summerizing.... – reduce Information.... – focus on essential features
2. Inferential

Table
- First step
- The simplest
- Title above
- Labled by arabic number

Graph
- Easier for non numerical reader
- Powerful impact on imagination
- Better for :trends, relationships, contrasts
- Title below
- Labled by latin number

Charting

Pie
- Nominal, ordinal
- %
- ☹ just 1 variable

Bar
Simple	clustered	stacked
1V	more V	more V

- Nominal, ordinal, discrete
- Width :same
- Space between bars :equel to bars /half
- heigh of bar is opposite to freq /RT freq /% on Y axis

Line
- Time :continuous V
- On X axis

Freq polygon
- Continuous V+Simple, Complex table
- Single point: opposite to freq on Y axis+opposite to mid point on X axis
- Single points join together

Dotplot

Histogram
- continuous
1. Bell, symetrical normal
2. uniform (rectangle)
3. Skewed* right, left*
4. Bimodal

Simple frequency
(Frequency, relative frequency(, %)
Nominal, ordinal

Grouped frequency distribution
)Frequency, cumulative freq, RT cumulative, % cumulative(
- Continuous
1. Construct table
2. Count number of class interval

1. 5-15
2. Not overlapping
3. No gabs
4. Each observation in only one class
5. Class mark (mid point)= (H+L) of class /2
6. All classes :same width =Range of values /(1+3.322(logN))

Data
- Values of observations
- Raw material
- Little, no meaning... further steps...

Information

Calculation

Central Tendency

Mode
- Counting
- Highest freq
- Exist(yes+no)
- Unique(yes+no)
- Nominal, ordinal, discrete
- ☹ no continuous

Median
- Middle value in ordered data
- Exist (yes)
- Unique (yes)
- All variable
- Skewness, outliers:not affected
- ☹ discard other values
- 1position:odd number
- 2position even number
- Median $=((n+1)/2)$

Mean
- average
- Exist(alway)
- Unique (always)
- discrete, cont V
- Skewness, outliers :is affected
- $\bar{X}=Sum\ X/N$

Weighted Mean
Average of number of means with frequencies
$WM=(w1*mean1+w2*mean2...) /(w1+w2+...)$