

DATA PRESENTATION

Data Presentation is the visual representation of quantitative data in different forms. The data should be presented in a manner that will communicate the maximum information in the most efficient way. Pictorial representations help people understand data easily and better.

Types of presentation formats

Graphs: Histograms, line graphs, scatter graphs

Charts: Bar charts, pie charts

Graphs

A graph is a visual display of the relationship between variables. The values of one set of variables are plotted along the horizontal axis or X-axis, while the values of a second set of variables along the vertical or Y-axis.

Histograms

A histogram is a graphic representation of the frequency distribution of a variable. Vertical rectangles (bars) are drawn in such a way that their bases lie on a linear scale representing different intervals. Each bar covers a class interval and the centers of the bases of the bars are located at the mid-point of the class intervals.

A histogram is called a frequency histogram when simple frequencies are plotted along the vertical axis. Instead of frequencies, if relative frequency (percentages) are plotted along the vertical axis, then it is called a relative frequency histogram.

Line Graph

If the mid points of the top of the bars of a histogram are connected together by a line and if the bars were omitted from the display, the resultant graph would be line graph (also called frequency polygon). Line graphs are good at showing trends over a period of time e.g. death rates, infant mortality rates, etc.

Scatter Diagrams

This is a method of displaying the distribution of two variables in relation to each other. The value of one variable is measured on the X-axis and the value of the other on the Y-axis. The variables have to be a continuous scale. Each point thus has two values, from the Y and X axes scales.

A wide scatter of the plots denotes poor correlation between the two variables. If the two variables are perfectly correlated, then all the plots will fall on the diagonal (regression line). The graphs may show a positive correlation, negative correlation or no correlation.

Charts

Bar Charts

A bar chart is a method of presenting discrete data organized in such a way that each observation can fall into one mutually exclusive category. The frequencies (or percentages) are listed along the Y-axis and the categories of the variables along the X-axis. The heights of the bars correspond to the frequencies. The bars should be of equal width and they should not be touching one another.

Pie Chart

This is a circular diagram (can be shown as 2-D or 3-D) divided into segments, each representing a category or sub-set of data (part of the whole). The amount for each category is proportional to the area of the sector (slice of the pie). The total area of the circle is 100% and it represents the total population being shown.

Misuse of graphics

1. The problem of scaling- Using scales that do not tally with the information
2. Graphs with scanty data
3. Chart with too much data

Guidelines for making good presentations

1. Before making a graph /chart, decide on the point that you wish to present and then choose an appropriate method.
2. Emphasize one idea at a time in a figure; too much information in a graph or a chart defeats the purpose of the entire presentation.
3. Use conventional graphical methods e.g. time is almost always plotted along the X-axis.
4. Pay careful attention to the scaling of the graph, use equal increments as far as possible.
5. Graphs and tables must be self-contained and must stand on their own without reference to the text. Clear labels of the graph are a must. Make sure you mention the what, where and when of your data.
6. Specify the units of measurement used clearly e.g. per cent, per 1000 etc
7. Mention the total sample size of the data for which the graph or chart is made
8. Only keys/legends should be within the field of the graph
9. If colours are used in the graph, make sure too many colours are not used.
10. Be consistent in the use of colours and fonts in a series of graphs and tables
11. Graphs and tables are subsidiary aids to the intelligence and should be taken as evidence of associations. The evidence must be drawn from statistical tables and tests. Graphs are a substitute for the actual tables. Statistical tables contain the basic data and they allow the reader to make their own calculations and judgements.

Source: www.sunmed.org