



Presentation of Data

By

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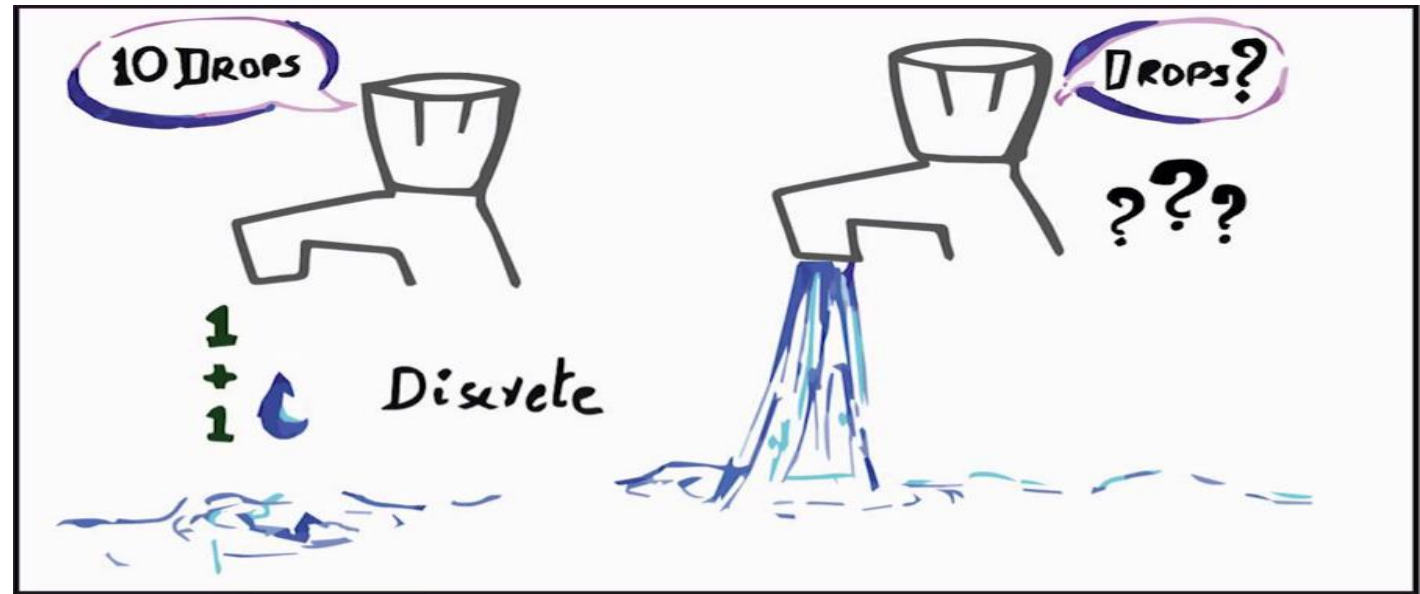
Data

Pieces of information ,such as numbers collected from measurement and counts obtained during the course of research study known as data To give a full picture of classification data can be divided into two types.



Two types of data as follows:

1. Discrete data have only one of a limited set of values and are counted only in whole numbers. Discrete variables may include things like hair color, gender, and number. These data are considered to be qualitative in nature





2.Continuous data are measurements made from a particular value within a defined range .Variables a long continuum such as temperature, scores on test ,and time .

These data are considered to be quantitative in nature.



Different scales of measurement are used for discrete and continuous data

Discrete data can use nominal or ordinal.

- **Nominal scales** of measurement consist of named categories with no order. For example, females may be placed in category A and males in category B.

Nominal



Pigs



Cows



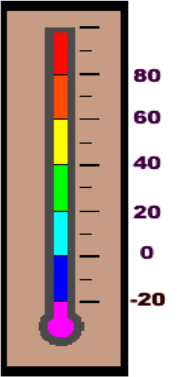
Dogs

Ordinal



- **Ordinal scales** of measurement consist of categories of variables in which the categories are in order, but there is no equal or defined distance between them





Continuous data use interval and ratio scales

- **Interval scales** of measurement have equal distance between variables, but there is no true zero point (i.e., temperature on Fahrenheit thermometer)



- **Ratio scales** of measurement have equal intervals between the variables,
but there is a meaningful zero point
(i.e., height and weight)



Types of Data

Types of data	Characteristics	Examples	Related Scales of Measurement	Appropriate data display
Discrete	Limited set of values, representative as whole numbers, qualitative	Hair color, number of times a person brushes	Nominal (named categories ,e.g. male or female Ordinal (same as nominal but categories in order ;stages of cancer	Bar graph
Continuous	Particular value within a range variables a long a continuum, quantitative	Temperature ,test scores, time	Interval (same as ordinal plus equal distance between variables but no zero; e.g., Fahrenheit Ratio (same as interval plus equal distance between variable with zero;e.g.,height, weight	Histogram

Tabulation

- General principles
- Use a clear and concise title that describes person, place and time — what, where, and when — of the data in the table. Precede the title with a table number
- The table should be numerical e.g. table 1,2
- A Title should be given to each table which should be brief and explanatory
- The heading of columns or rows should be clear or concise
- The table should not be too large
- Foot notes may be given ,where necessary providing explanatory notes or additional information

Simple table

- When characteristics with values are presented in the form of table .it is known as simple table.

e.g. infant mortality rate in some countries

Name of Country	Infant mortality rate
Pakistan	90
Bangladesh	60
Srilanka	25
India	60



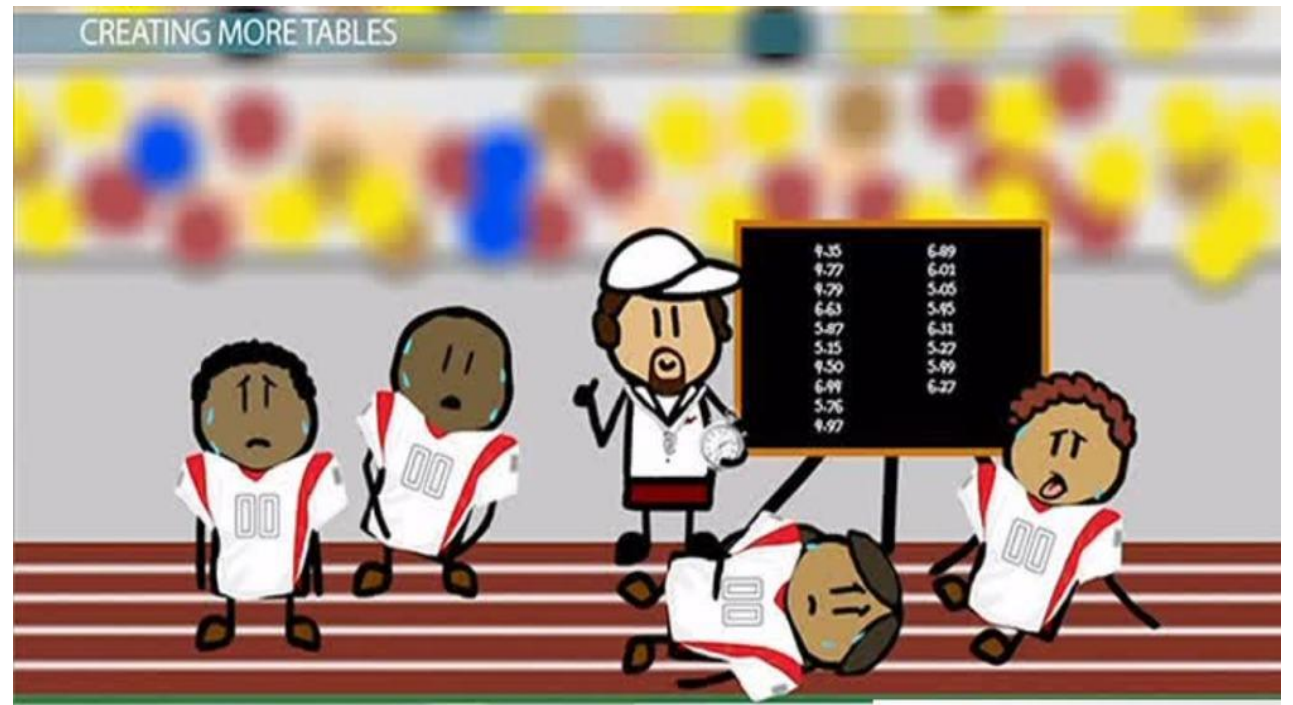
Frequency distribution table

- In the frequency distribution table, the data is first split up into convenient groups (class interval), and the number of items (frequency) which occur in each group is shown in adjacent columns



Frequency distribution table

Hence it is a table showing the frequency with which the values are distributed in different groups or classes with some defined characteristics



The frequency (**f**) of a particular observation is the number of times the observation occurs in the data. The *distribution* of a variable is the pattern of frequencies of the observation. Frequency distributions are portrayed as frequency tables, histograms, or polygons.

Distribution of 50 patients according to their ABO blood groups

Blood group	Frequency	%
A	12	24
B	18	36
AB	5	10
O	15	30
Total	50	100



Example: **Constructing a frequency distribution table**

A survey was taken on Maple Avenue. In each of 20 homes, people were asked how many cars were registered to their households. The results were recorded as follows:

1, 2, 1, 0, 3, 4, 0, 1, 1, 1, 2, 2, 3, 2, 3, 2, 1, 4, 0, 0

Frequency table for the number of cars registered in each household

No of the cars		Frequency	Relative f	%
0		4	0.2	20
1		6	0.3	30
2		5	0.25	25
3		3	0.15	15
4		2	0.1	10
Total		20	1	100

To do this, divide the frequency by the total number of results and multiply by 100.

Complex Frequency Distribution Table



Complex frequency distribution Table

Distribution of 60 patients at the chest department of Alexandria hospital in May 2008 according to smoking & lung cancer

Smoking	Lung cancer				Total	
	positive		negative		No.	%
	No.	%	No.	%		
Smoker	15	65.2	8	34.8	23	100
Non smoker	5	13.5	32	86.5	37	100
Total	20	33.3	40	66.7	60	100

Charts and Diagrams

- Charts and diagrams are useful methods of presenting simple data.
- They have powerful impact on imagination of people.
- Gives information at a look
- Diagrams are better retained in memory than statistical table.

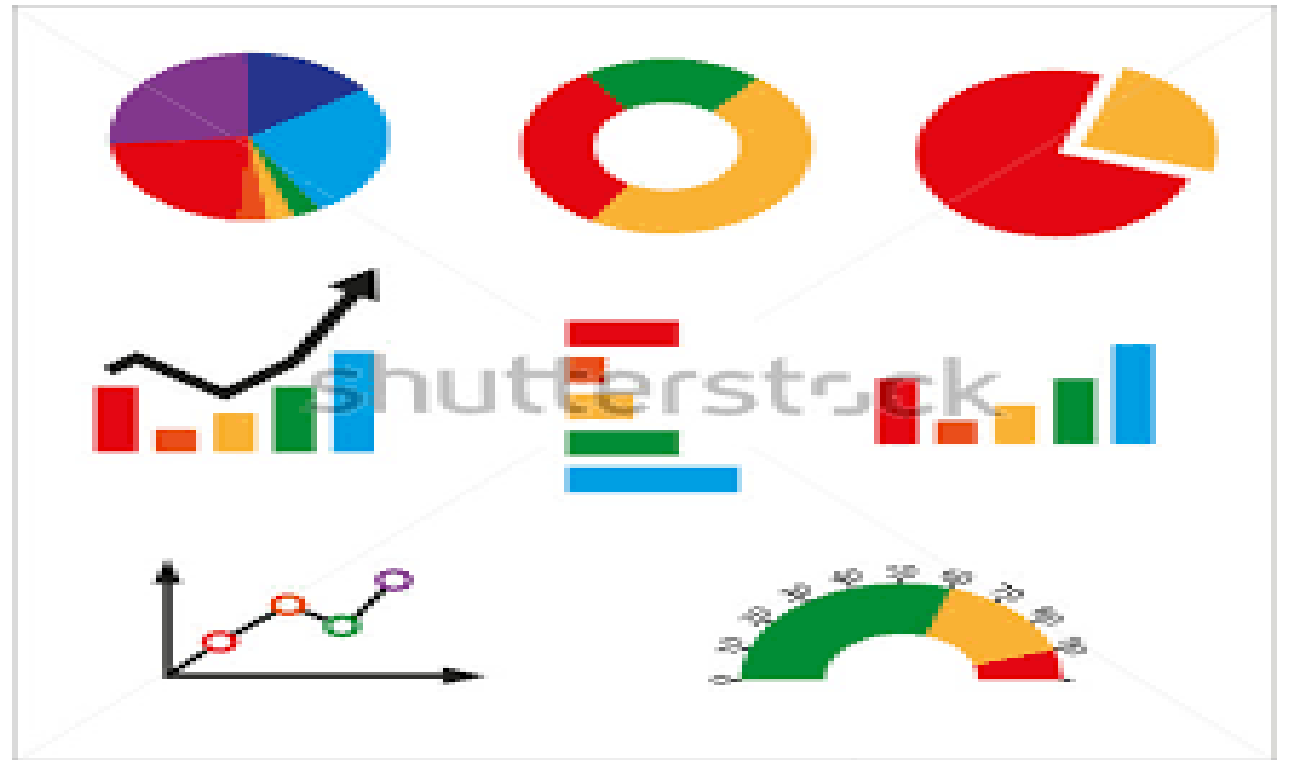


Common diagrams

- **Simple bar graph** .It is often used to display nominal or ordinal data that are discrete in nature .
- **Multiple diagram**
- **Histogram** .Although a type of bar graph is used most often to represent interval or ratio scaled variables that are continuous in nature

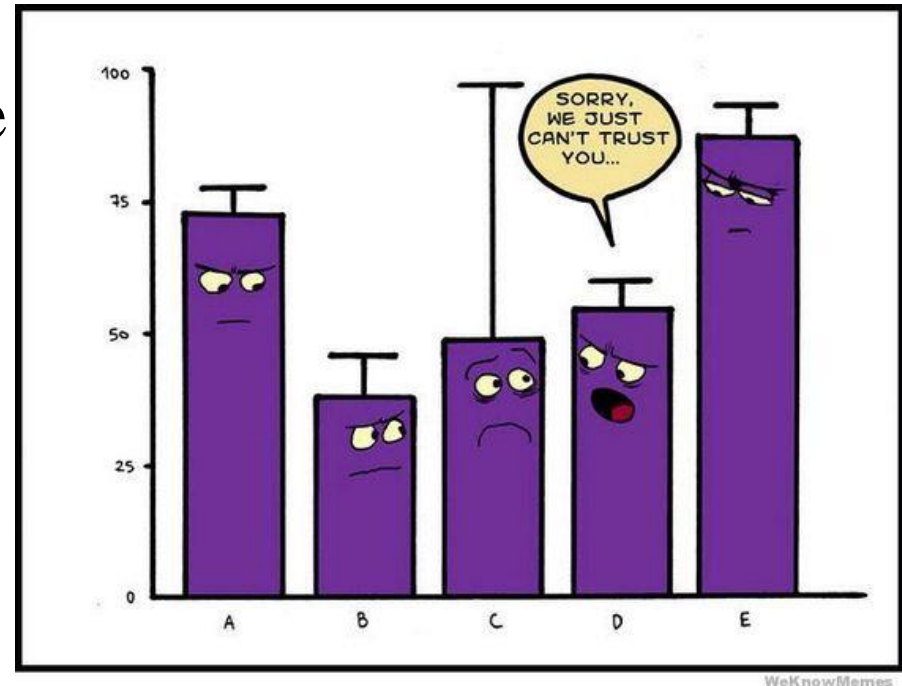


- **Frequency polygon** .It is used to present data that are continuous in nature
- **Scatter diagram.**
- **Line diagram.**

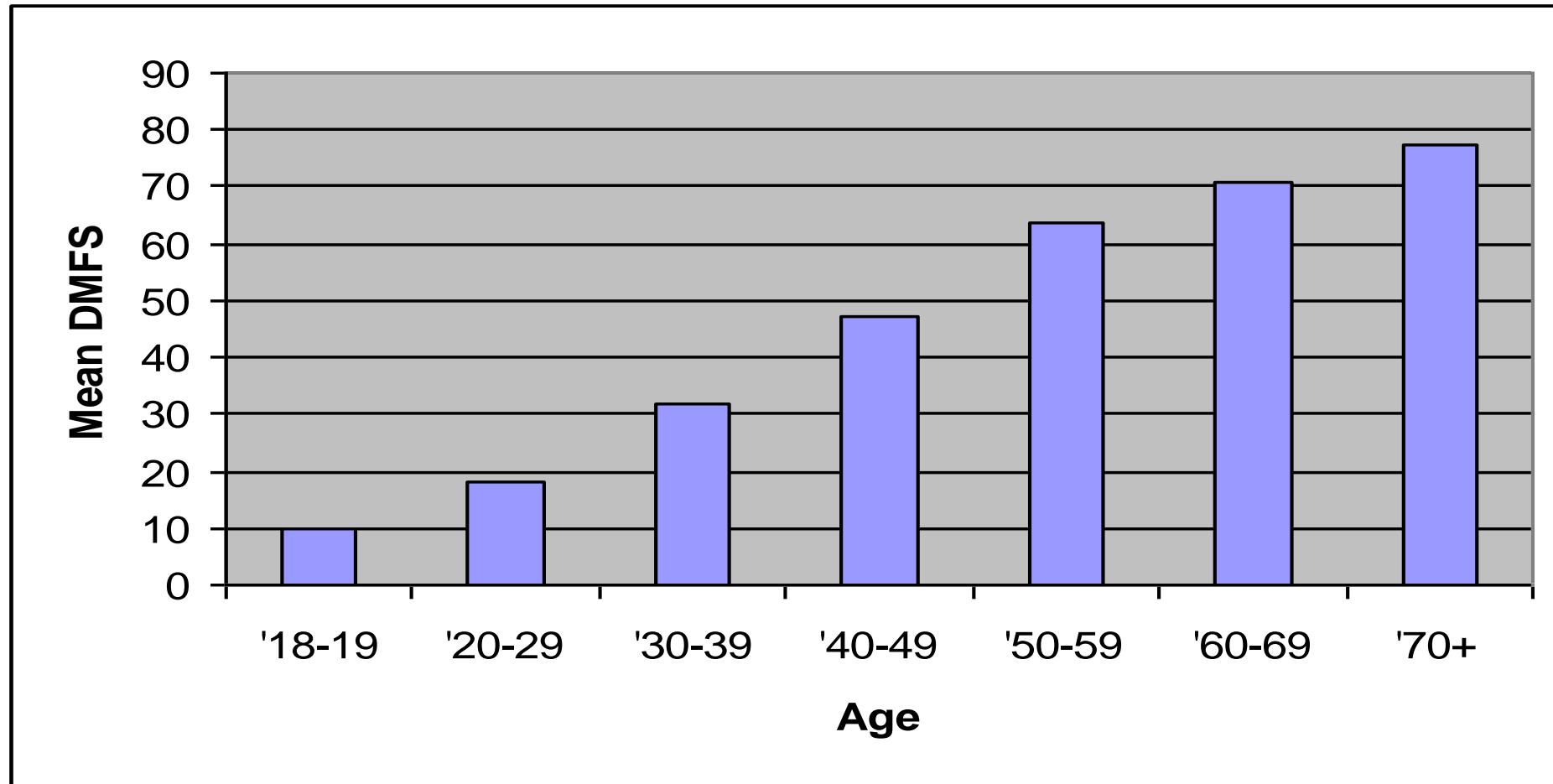


Bar charts

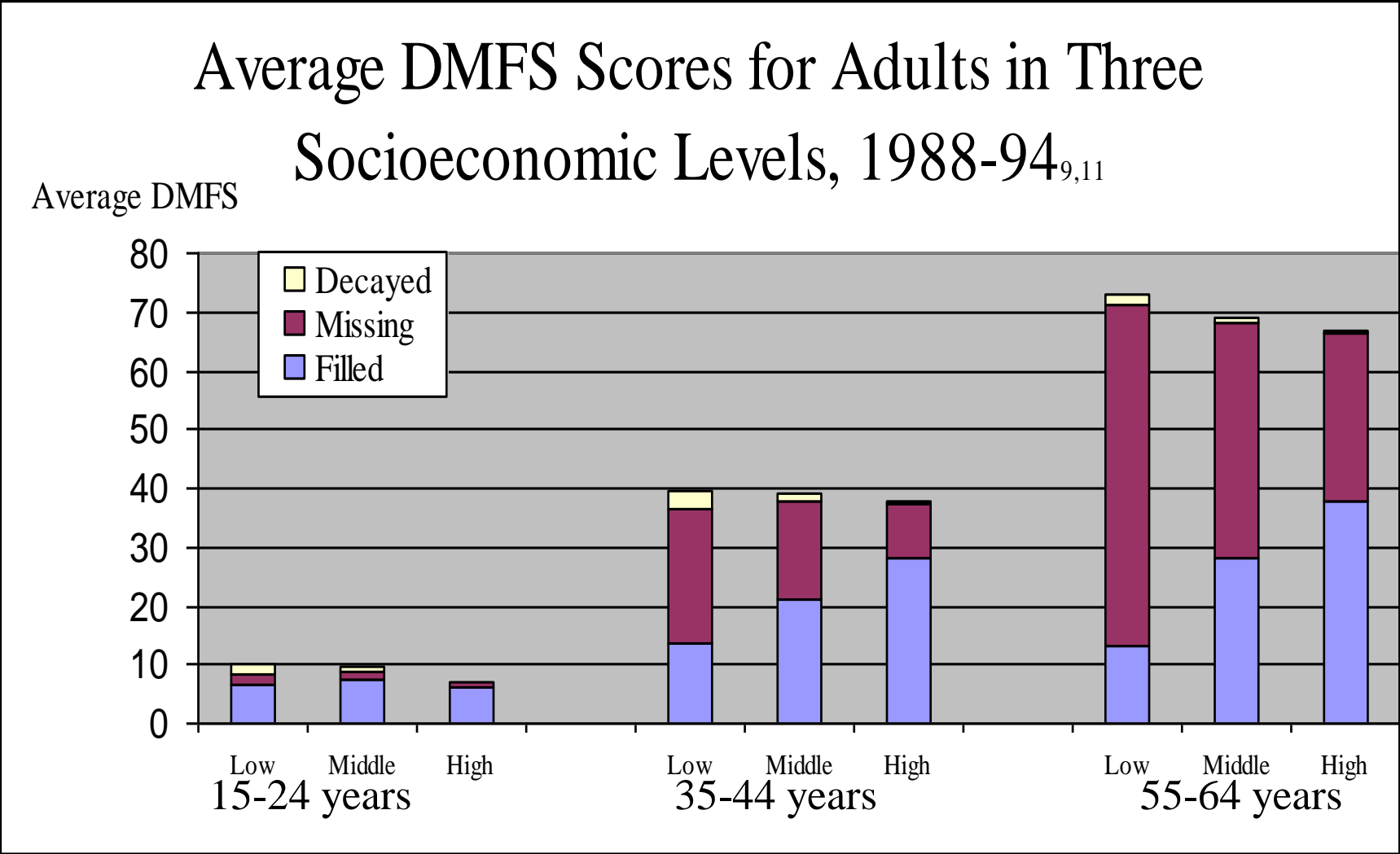
- The data presented is categorical
- Data is presented in the form of rectangular bar of equal breadth
- Each bar represents one variant/attribute
- Suitable scale should be indicated and scale started from zero
- The bar may be vertical or horizontal



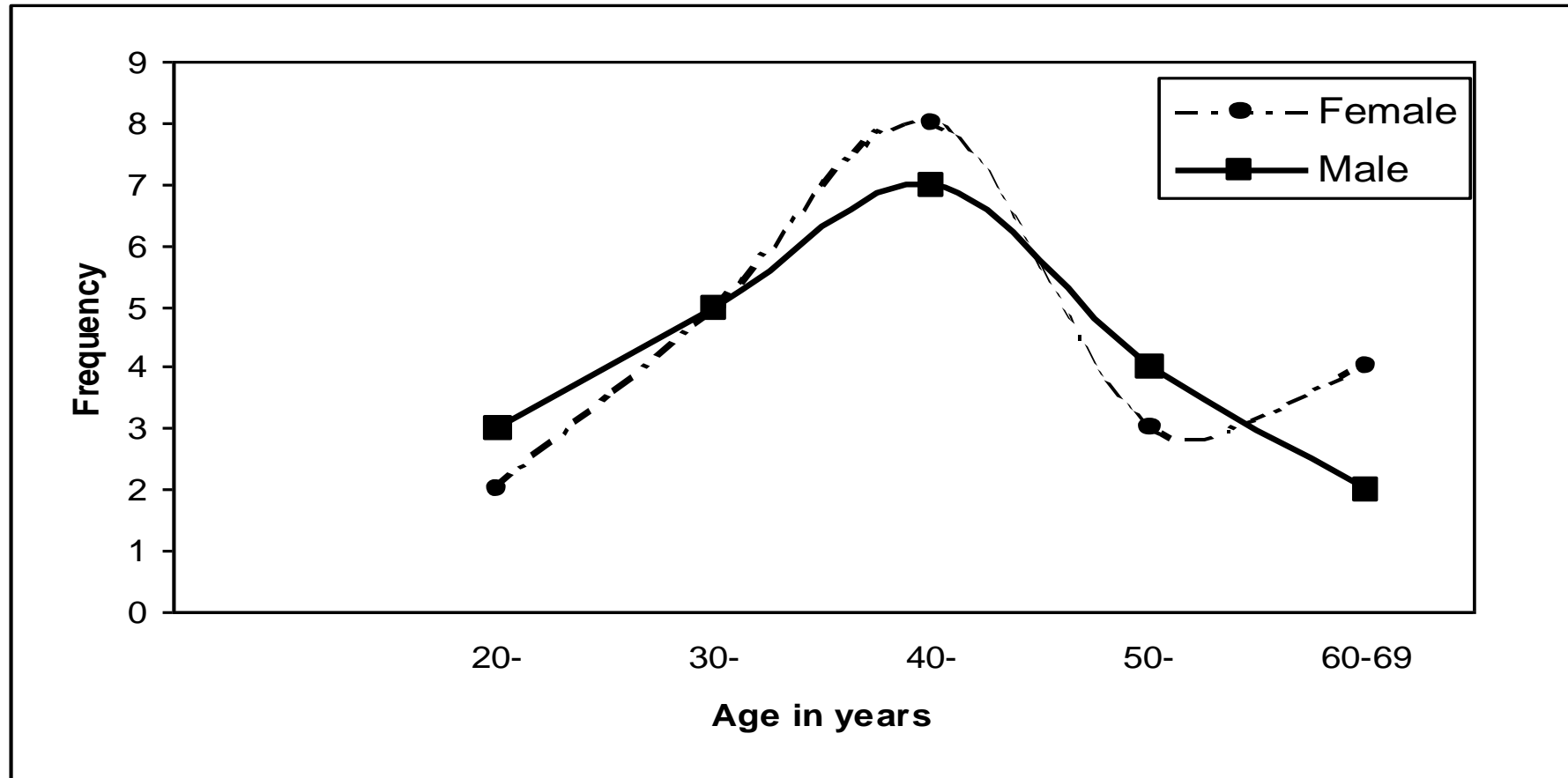
Average number of dental caries on permanent tooth surface by age.



Component Bar Diagram. This diagram is used to represent qualitative data. When it desired to represent both ,the number of cases in major groups as well as the subgroups at the same time .



Frequency of visiting Dental Clinic by year in both Gender(Frequency curve)



Histogram

- This diagram is used to represent qualitative data of continuous type A histogram is a bar diagram without gap between the bars.

It represents a frequency distribution

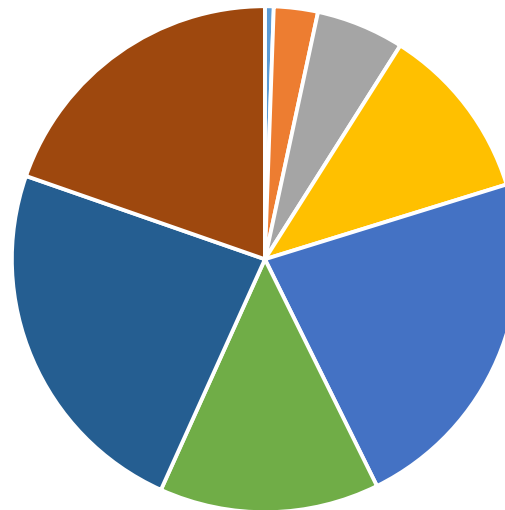


Pie Diagram



- .A circle is divided into different sector corresponding to the frequencies of the variables in the distribution .This diagram cannot represent two or more data set.

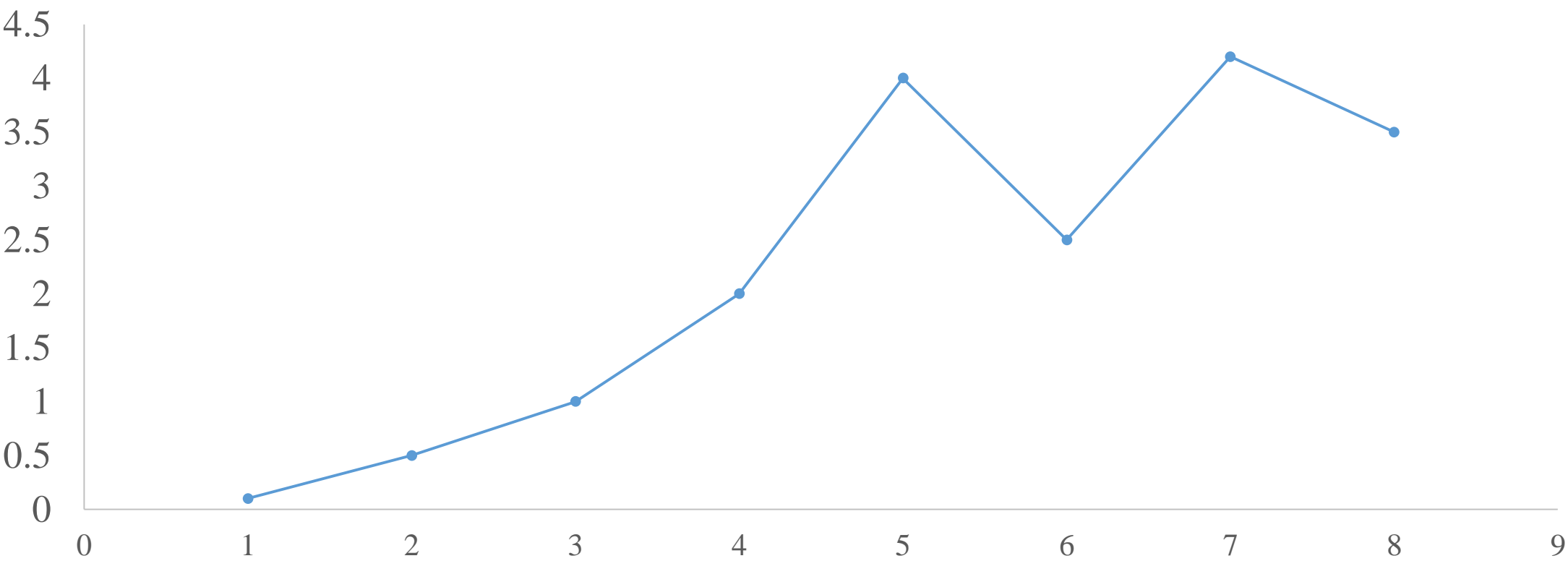
Fluoride concentration in communities



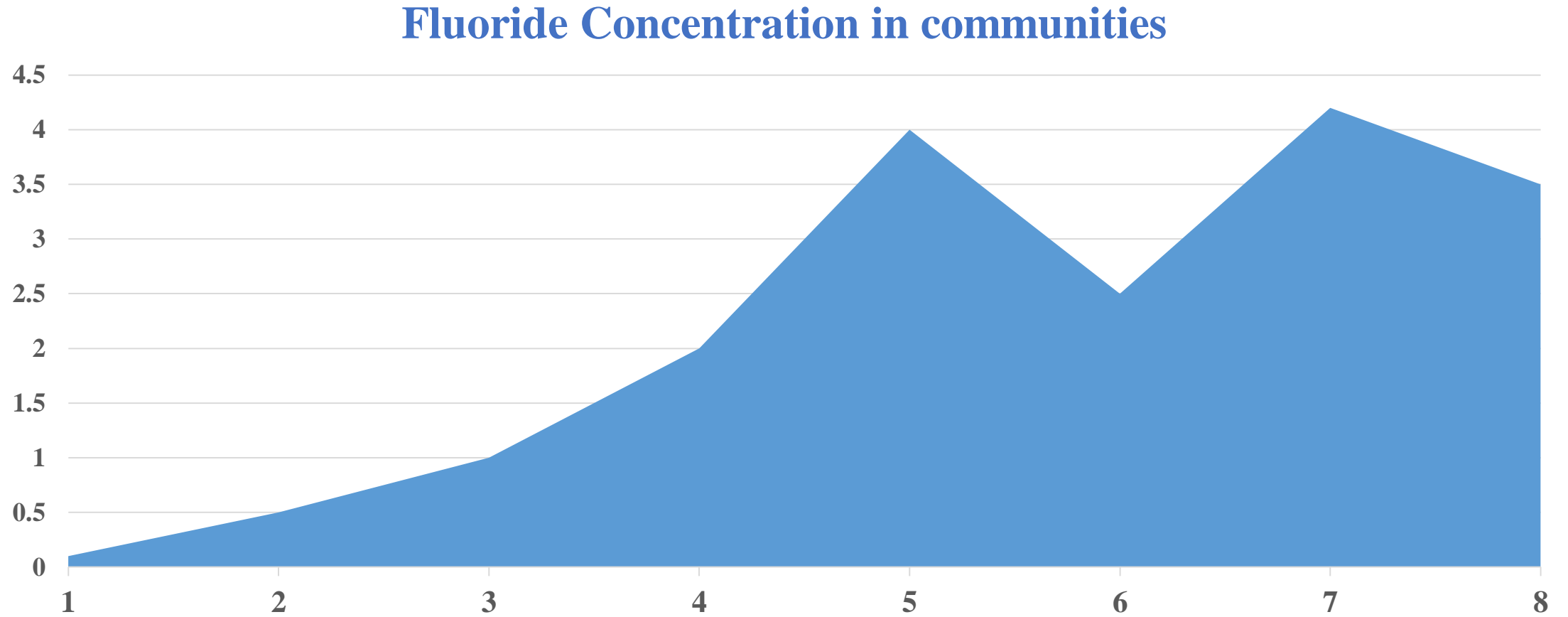
■ 1 ■ 2 ■ 3 ■ 4 ■ 5 ■ 6 ■ 7 ■ 8

Line Diagram

Fluoride concentration in communities



Frequency polygon :Useful to compare two or more distribution .



A decorative arrangement of three lit pink candles in a glass dish, surrounded by white cherry blossoms and petals on a blue background. The candles are shaped like flowers and are lit, with their flames visible. The dish is filled with water, and the blossoms and petals are floating on the surface. The background is a soft, out-of-focus blue.

Thank you for your kind attention