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Methodology

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Q:2 PRESENTATION OF DATA:

Data once collected should be presented in a such a as to be easily understood. The style of presentation depends of course on type of data

- Data can be presented in a frequency tables charts, graphs etc. ~~these~~

⇒ FREQUENCY TABLES:

In a frequency table data is presented in a tabular form. it gives the frequency with which a particular value appears in the data.

Frequency table:

	f	Percent	v. percent	Comulative percent
Velis Strongly disagree	2	2.0	2.0	2.0
disagree	13	13.0	13.0	15.0
average	26	26.0	26.0	41.0
agree	26	26.0	26.0	67.0
Strongly agree	33	33.0	33.0	100.0
total	100	100.0	100.0	

⇒

Graphs:

Graphs is another way to summarize and display data. It is through the use of graph or pictorial representation of numerical data, Graphs should be designed so that they convey at a single glance the general patterns in a set of data.

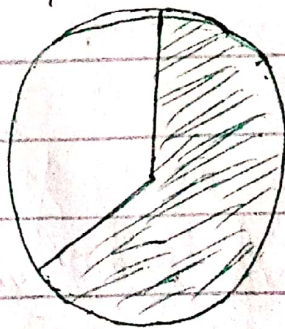
⇒

Pie Chart:

Pie charts can also be used to display nominal or ordinal data.

Gender distribution

Female
30%



Male 70%

⇒

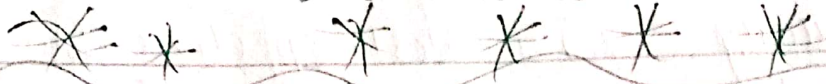
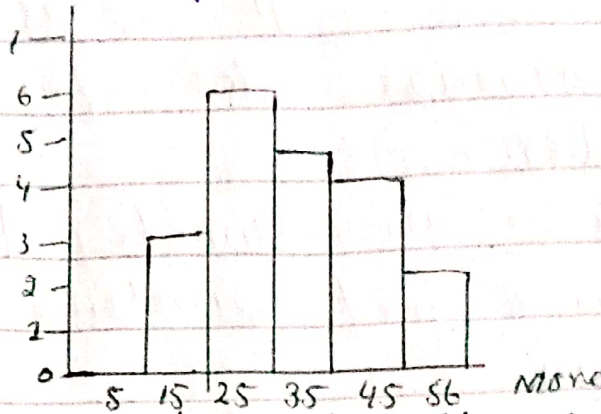
Histogram:

A histogram describe a frequency distribution for quantitative data.

(3)

→ Histogram:

Daily high temperature



Q.3 RELATIVE RISK:

It can be only used for data from studies with a randomly selected sample.

- It can be used to calculate the attributable risk.
- * usually in prospective, cross-sectional trial studies.
- * It needs incidence of the disease.

* It demonstrate temporality

Examples:-

you could have two groups of women: One group has two a mother, sister or daughter who has

(4)

had breast cancer.

⇒ Odds Ratio.

- It is used to summarize data from most studies.
- * Give an estimate of risk when the prevalence is not known.
 - * usually in Retrospective Studies and in Cross-sectional
 - * It does not need incidence for calculation.
 - * It has good estimate for Relative ~~risk~~^{risk} in case of low frequency disease.

Examples

if you are normally on call 2 out of 7 days in a week then the odds of you being on call on a certain day of the week is $\frac{2/7}{5/7} = 0.40$

(5)

Q.5 Hypothesis:

A testable theory, or statement of belief used in evaluation of a population of interest e.g. mean or proportion.

⇒ Steps IN Hypothesis testing:-

- ① Statement of research question in terms of statistical hypothesis
- ② Selection of an appropriate level of significance. The significance level is the risk we are willing to take that a sample, which showed a difference level is was misleading. 5% significance level mean that we are ready to take a 5% chance of wrong result
- ③ Choosing an appropriate statistics
t test & test for continuous data
Chi square for proportion etc.
Test statistics is computed from the sample data, α is used to determine whether the null hypothesis should be rejected or retained.
test statistics generates p value.

④
P value: indicates the probability or likelihood of obtaining a result at least as extreme as that observed in a study by chance alone. assuming that there is truly no association between exposure and outcomes under consideration.

By convention the p value is set at 0.05 level. Thus any value of P less than or equal to 0.05 indicate there is at most a 5% probability of observing an association as large or larger than that found in the study due to chance alone given that there is no association between exposure and outcomes. if p value > 0.05 do not reject the null hypothesis.

④ performing calculating and obtaining p value.

⑤ Drawing conclusions. rejecting null hypothesis if the p value is less than the set significance level.

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Test of	True	False
Significance	Hypothesis	Ho Hypothesis
Accept	Correct decision ✓	Wrong decision
Ho Hypothesis		B Error
Reject	Wrong decision a Error	Correct decision ✓
Ho Hypothesis		

Q.4

PREVALENCE:

Prevalence qualifies the proportion of individuals in a population who have the disease at a specific instant and provides an estimate of the probability that an individual will be ill at a point in time.

→ The formula for calculating the prevalence $P = \frac{\text{number of existing cases of a disease}}{\text{total population}}$.

Point Prevalence:

Prevalence can be thought of as the status of the disease in a population at a point in time and as

⑧

Such is also referred to as "point prevalence."

- This "point" can refer to a specific point in calendar time or to a fixed point in the course of events that varies in real time from person to person, such as the onset of menopause or puberty or the third postoperative

⇒ PERIOD PREVALENCE :

* It represents the proportion of cases that exist within a population at any point during a specified period of time.

* The numerator thus includes cases that were present at the start of the period plus new cases that developed during this time.

E.g. Frequency of patient receiving psychiatric Rx between May 31 - Dec 01 - 2008.

(a)

Q.11

50, 79, 70, 48, 90, 68, 89, 92
77

Solution:

48, 50, 68, 70, 77, 79, 89, 90
92

(1)

Mean =

$$\frac{\text{Sum of number}}{\text{Number of Students}}$$

$$\Rightarrow \frac{48+50+68+70+77+79+89+90+92}{9}$$
$$= \frac{663}{9} = \boxed{73.66}$$

(2)

Median

48, 50, 68, 70, $\boxed{77}$, 79, 89,
90, 92

Median $\boxed{77}$

(3)

Mode:

There is no repeated
number in the question ~~so~~
So the mode is Zero(0).

End up