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Subject :- Research Methodology

Program :- Bs Dental 6<sup>th</sup> semester

Date :- 23<sup>rd</sup> jun 2020

## Question No 1

Nine students take a test. Their scores out of 100 are; 50, 79, 70, 48, 90, 68, 89, 92, 77, find out the Mean, Median and Mode of the scores.

Ans +

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

Mean

Mean =  $\frac{\text{Sum of All numbers}}{\text{numbers of All numbers}}$

$$\text{Mean} = \frac{50 + 79 + 70 + 48 + 90 + 68 + 89 + 92 + 77}{9}$$

$$= \frac{663}{9} \Rightarrow \boxed{\text{Mean} = 73.67}$$

Median

In Median write all numbers in ascending order = 48, 50, 68, 70, 77, 79, 89, 90, 92

Median is 77

Mode

If there is no representation of any number again means there is no repetitive number in the given sample, hence there is no mode

Mode = No Mode

Q No 2

Write a short note or presentation of research data.

Answer

The result section of an original research paper provide answer to this question.

"What was found"

The amount of finding generated in a typical research project is often much more than what Medical journal can accommodate in one article. So the first thing the author needs to do is to make a selection of what is worth presenting. Having decided that, he/she will need to convey the message effectively using the mixture of text, tables, and graphics.

⇒ Some general Rules

⇒ ~~It~~ Keep it simple

⇒ Data should answer the research questions identified earlier.

⇒ Leave the process of data collection to the method, Section do not include any discussion.

These error surprising quite common

-> Always used past tense in describing a result.

-> Text, tables or graphics. These complement each other in providing clear reporting of research finding. Do not repeat the same information in more than one format. Select the best method to convey the message.

Q No 3

Differentiate between Relative risk and odd ratio. with examples.

Ans

Odds Ratio and Relative Risk are often confused despite being unique concepts. Well both measure association between a binary outcomes variable and a continuous or binary prediction variable.

The basic difference is that the odds ratio is a ratio of two odds (yep, it's, that, obvious) where the relative risk is a ratio of probabilities.

Examples (Relative Risk)

Suppose you have a school that wants to test out a new tutoring program. At the start of the school year they impose the new tutoring program for a group of students randomly selected from those who are failing at least one subject at the end of school year, the number of students in each group how fail any of these classes is measured.

	Event fail	Event Done /id
Treatment Tutoring	a	b
Control No tutoring	c	d

$$RR = \frac{\text{Risk of event in treatment group}}{\text{Risk of event in control group}}$$

$$\Rightarrow \frac{a/(a+b)}{c/(c+d)}$$

Example of odds Ratio

$$OR = \frac{\text{odds of event in treatment group}}{\text{odds of event in control group}}$$

$$= \frac{a/b}{c/d} = ad/bc$$

Q No 4

What is meant by prevalence in research? Also explain point and period prevalence.

Ans

Definition: Prevalence is the proportion of a population who have a specific characteristic in a given time period.

The measure of disease frequency we have calculated as the prevalence. That is the proportional of the population that has a disease at a particular time. Prevalence indicate the probability that a member of the population has a given condition at a point in time. It is therefore, a way of assessing the overall burden of disease in the population, so it is useful measure for administration when assessing the need for service or treatment facilities.

Point prevalence

Point prevalence is the proportion of a population that has the characteristic at a specific point in time.

## Period prevalence

Period prevalence is the proportion of a population that has the characteristic at any point during a given time period of interest. "Past 12 months" is a commonly used period.



Q No 5

What is Hypothesis? Also explain different steps of testing of hypothesis.

Ans r A hypothesis is a precise, testable statement of what the researcher predict will be the outcome of the study.

This usually involves proposing a possible relationship between two variable the independent variable and the depend variable.

Steps in testing hypothesis

step 1 r State the Null Hypothesis

The null hypothesis can be thought of as the opposite of the "guess" the research made.

So the null would be that there will be no difference among the groups of the plant specifically in more statistically language for the null

Step 2r State the alternative Hypothesis  
The alternative hypothesis ( $H_1$ ) is the statement that there is an effect or difference. The reason we state this is that if the null is rejected there is many possibilities.

Step 3r Set  
If we look at what can happen in a hypothesis test we can construct the following contingency table.

Step 4r Collect data  
Remember the importance of recognizing whether data is collected through experimental design.

Step 5r Calculate a test statistics.  
For categorical treatment level means we use an F statistics, named after R.A. Fisher.

Step 6r Construct Acceptance or Rejection  
Step 7r Based on step 5 and 6 draw a conclusion about  $H_0$  or  $H_1$ , etc.