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**Subject: Research Methodology**

**Mid Term Assignment.**

**Semester: DT 6Th .**

**Section A.**

1. **You may remember that three years ago there was a multistate outbreak of illnesses caused by a specific and unusual strain of Listeria monocytogenes. As part of the investigation of this outbreak, CDC workers checked the food histories of 20 patients infected with the outbreak strain and compared them with the food histories of 20 patients infected with other Listeria strains. This study design is best described as which one of the following:**
2. Analytical, experimental
3. observational, case control
4. **A published study follows a large group of women with untreated dysplasia of the uterine cervix, documenting the number who improve, stay unchanged, or progress into cervical cancer. This study design is best described as which one of the following:**
5. Analytic, experimental
6. Analytic, observational, cohort
7. Analytic, observational, case/control
8. Descriptive, observational
9. **A community assesses a random sample of its residents by telephone questionnaire. Obesity is strongly associated with diagnosed diabetes. This study design is best described as which one of the following:**
10. Case-control
11. Cohort
12. Cross-sectional
13. Experimental
14. **Based on a list of residents from election rolls, 2/3 of men in a large city are invited (including repeated educational urgings) and 1/3 of men are not invited to be screened by PSA blood test for prostate cancer. Over the next 10 years the two groups are compared as to the rate of death from prostate cancer. This study design is best described as which one of the following:**
15. Case-control
16. Cohort
17. Cross-sectional
18. Experimental
19. **In a case-control study of alcohol intake and bladder cancer, cases and matched controls are each interviewed by interviewers who are not blinded as to whether the subject is a case or a** **control. Many of the interviewers are in fact convinced that drinking alcohol is a cause of bladder cancer. Is this likely to represent a bias?**
20. No, because the interviewers can't affect whether the subjects are considered cases or controls; that's already decided
21. Yes, but it's hard to predict the direction of the bias.
22. Yes, and would predispose to a rejection of the null hypothesis.
23. Yes, and would predispose to an acceptance of the null hypothesis.
24. **Interviewing all members of a given population is called:**
25. a sample.
26. a Gallup poll.
27. a census.
28. a Nielsen audit.
29. **Sampling means following a sequence of stages. Which ONE of the following stages should come before the others?**
30. Proceed with the fieldwork.
31. Find suitable source for the population members.
32. Define the people of interest.
33. Examine the objective of the study.
34. **Which ONE of these sampling methods is a probability method?**
35. Purposive.
36. Judgement.
37. Convenience.
38. Simple random.
39. **Which ONE of the following is the benefit of using simple random sampling?**
40. We can calculate the accuracy of the results.
41. The results are always representative.
42. Interviewers can choose respondents freely.
43. Informants can refuse to participate.
44. **Which ONE of the following is the main problem with using non-probability sampling techniques?**
45. The expense.
46. The results are never representative.
47. Human judgement error.
48. Informants can refuse to participate.
49. **Which ONE of the following is the best - but an often unused - way to decide on sample size?**
50. By using industry standards.
51. By calculation.
52. By 'building blocks'.
53. By budget available.
54. **Which ONE of the following methods is generally used in qualitative sampling?**
55. Random digit dialling.
56. purposive.
57. Stratified random.
58. Simple random.
59. **The median of 7, 6, 4, 8, 2, 5, 11 is**
60. 6
61. 12
62. 11
63. 4
64. **Number which occurs most frequently in a set of numbers is**
65. mean
66. median
67. mode
68. None of above
69. **The mode of 12, 17, 16, 14, 13, 16, 11,** 14 is
70. 13
71. 11
72. 14
73. 14 and 16

**Section B**

**Q 2: Explain cohort study and types of cohort study design in detail?**

 **Ans :-**

###  COHORT STUDY:-

Cohort study is a type of analytical study which is undertaken to obtain additional evidence to refute or support between suspected cause and disease.

###  TYPES:-

 1 Prospective cohort study.

 2 Retrospective cohort study.

 3 Ambi directional cohort study.

###  PROSPECTIVE STUDY:-

* It is the strategy of cohort studies to start with a reference population some of whom have certain characteristics or attributes relevant to the study
* Both groups should at outset of the study be free from the condition under consideration.

 **ADVANTAGES:-**

 Because they are longitudinal and study for choice of:

* Establishing causes of a condition.
* Allow for measurement of incidence.
* Study of multiple effects of a single exposure.

 **DISADVATAGES:-**

1. Large study population required
2. Expensive
3. Unpredictable variable
4. Study results are limited

 EXAMPLE:-

 Study subjects were examined every 2 years for 20 years.

###  RETROSPECTIVE COHORT STUDY:-

* A retrospective cohort study is the outcome have all occurred before the start of investigation**.**
* known with the name of historical cohort and noncurrent cohort.

###  ADVANTADES:-

### Less expensive

### Completed in much shorter time than a prospective study

###  DISADVANTAGES:-

### The quality of data collection is not as good as records generated for clinical purpose and not for research

### Because of a large number of biases associated with these studies, carry weight is establishing a cause then prospective studies.

###  EXAMPLE:-

Suppose that we began our study on association between smoking habit and lung cancer in 2008.

###  AMBI DIRECTIONAL COHORT STUDY:-

* Elements of prospective and retrospective cohort are combined.
* The cohort is defined from past records and assesses of date for outcome.

 **EXAMPLE:-**

Outcome evaluated was death from leukemia or aplastic anemia between 1934 to 1954.

 **DESIGN OF COHORT STUDY:-**

Disease present

**Exposed to risk factor --------------🡪** Disease absent

 COMPARE RATE

 Disease present

**Not exposed to risk factor----------🡪**  Disease absent

 **PRESENT---------------------------🡪 FUTURE**

**Q4: Define and explain data and types of data?**

**Ans:-**

 DATA:-

* Data are the information or characteristics which we collect by observation. Data is the group of values of qualitative or quantitative variables.

 **TYPES: -**

 **1**: QUANTITATIVE DATA:-

* Quantitative data is define as the value of data in the form of counts or numbers where each data set has an unique numerical value associated whit it.
* Quantitative data is usually collected for statistical analysis using surveys or questionnaires sent across to specific section of a population.

### 2: QUALITATIVE DATA:-

### Its defined as the data that approximates and characterizes.

### This data is the type of non numerical in nature.

### This type of data is collected through methods of observations, one to one, interview, conducting focus group and similar methods.

### Its also known as categorical data.

### 3: CATEGORICAL DATA:-

###  We have two types of categorical data :-

### Nominal data.

### Ordinal data.

### NOMINAL DATA:-

### It can be as the classification of the observation into mutually exclusive qualitative classes is called nominal data.

### Eg: Student classified as male and female.

### Categories:- male, female

###  Single, married.

### ORDINAL DATA:-

### In ordinal data the variable are also divided into a number of categories, but they can be ordered one above another, from lowest to highest.

### Eg: Level of knowledge

###  Good, better, best.

**Q3: Define sample and explain types of non-Probability sampling?**

**Ans:-**

 SAMPLE**:-**

* A sample is a group of people, objects or items that or taken from a large population for measurement.
* The sample should be representative of the population to ensure that we can generalize the finding from the reaserch sample to the population as a whole.

**TYPES OF NON PROBABILITY SAMPLING:-**

 1: CONVENIENCE SAMPLING

 2: QUOTA SAMPLING

 3: PURPOSIVE SAMPLING

 4: SNOWBALL SAMPLING

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###  1:CONVENIENT SAMPLING:-

 When selecting of participants easy with no randomization called convenient sampling.

 **EXAMPLE:-**

 If we have more than thousand university students but we are interested in 100 students. We should simply stand at one of the main entrances to campus where it should be easy to invite the many students , so it is very easy.

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###  2: QOUTA SAMPLING:

 It is the selecting of participants in numbers proportionate to numbers in the large population.

###  EXAMPLE:-

 Number of students from some group that we would occur in the sample would be base on the proportion of girls and boys.

###  3: PURPOSIVE SAMPLING:-

 It’s also called judgmental sampling or subjective sampling which reflects a group of sampling techniques that is based on the judgment of the researcher.

EXAMPLE:-

 specific people and specific cases or events.

 4: SNOWBALL SAMPLING:-

It is the selecting of participants by searching one or two participants and tell them to refer you to others

EXAMPLE**:-** meeting of poor or homeless person, asking to introduce you to other poor people you might ask.