

CMD 305 - COURSE

(RESEARCH METHODOLOGY & BIostatISTICS)

Tutorial Topic: SAMPLING TECHNIQUES (QUESTIONS)

- Q1) What do you mean by 'sample' and population? Explain with a simple example.
- Q2) Why do you study only a sample of patients? Write down points only.
- Q3) a) What do you call that sample where subjects are selected as you wish?
b) What do you call that sample where subjects are selected without any bias?
- Q4) Give names of some of the random sampling techniques you know.
- Q5) In a big hospital, every year 500 cases of MI (myocardial infarction) are reported. We want to study their physiological profile-their BP, cholesterol level, lipoprotein level, BMI, etc. Resources permit us to do investigations only for 50 cases. How do you select a **simple random sample(SRS)** of 50 cases out of these 500 cases. Explain the crude way as well as easy way to select this sample.
- Q6) A researcher wants to take a random sample of 100 cases from 1000 deliveries that occurred in maternity hospital in the last year. He has taken one random number out of 1 and 10 say, 5. Then he took a case having ID No.5. Then he took cases having ID numbers 15,25,35,45.....995 as his sample. What method of sampling the researcher adopted here?

Q7) Consider one more hospital where 1000 MI cases were reported last year. He wants to do a study on these cases. As the number of cases is large, he wants to take a sample of 100 cases. And also, as the physiological parameters of these cases would be different in overweight and less weight cases, the researcher wants to divide these 1000 MI cases into two groups: one with overweight/obese (that is $BMI \geq 25$) cases and the other less weight ($BMI < 25$) cases and that both these groups to represent in his sample of 100 cases. Then he took a sample of 50 patients at random from each of these two groups.

- a) What are these two groups called in sampling?
- b) What is the sampling method adopted here to select a sample of 100 cases? Why did the researcher adopt this sampling method?

Q8) It was decided to estimate prevalence of diabetes in KSA. He had limited resources. So, he divided entire KSA into 5 regions as north, south, east, west and central. Then he made 10 contiguous geographical areas in each of these five regions. Then he selected one area at random from each region. He collected data from all the eligible individuals from each selected area and he found 5000 individuals from these five selected areas. Then he collected relevant data from all these individuals.

- a) What type of sampling method he used here?
- b) Why did he adopt this method?

Q9) Health authorities asked an epidemiologist to find out the prevalence of anemia in high school children of standard VI to X in a district of an African country. There are 60 schools in this district. And each school has standard VI to X classes. He wanted to use multistage sampling method to estimate the prevalence of anemia in high school children of standard VI to X in that district? How he would have done multistage sampling method in this situation.