

IIHMR UNIVERSITY
Institute of Health Management Research
MBA Hospital and Health Management
Batch-24 (2019-2021)
Essentials of Epidemiology
Term Examination
1 Year
September 2019



Time - 3 Hour

MM-50

The question paper contains 1 printed page. Each question carries 10 marks.

Q. 1. Describe the design of a case-control study of the relationship between use of oral contraceptives and the development of breast cancer. Discuss the types and advantages of case-control studies. Differentiate this design from a retrospective cohort study design. (10 Marks)

OR

Describe the design of a cohort study to establish the causality between use of supplementary nutrition in Anganwadis (ICDS scheme) and reduction of severe malnourishment in a tribal district of Chhattisgarh. Discuss the different variants of cohort studies and their scope in healthcare. Differentiate this design from a randomized control trial.

Q. 2. A study was conducted to examine risk factors for spontaneous pneumothorax (collapsed lung), including use of car air fresheners. 430 emergency room cases were identified from Florida hospitals in 2005, and 1204 controls were sampled from the patients admitted to the emergency room for broken bones or lacerations. It was found that 110 of the cases and 214 of the controls used a car air freshener regularly. The remaining cases and controls did not use air fresheners in their car. (10 Marks: 2.5*4)

Based on the above information, please solve the following questions:

- a) Prepare 2 by 2 table.
- b) Calculate the odds ratio
- c) Write an interpretation of calculated odd ratio.
- d) Discuss a situation when the odds ratio could be a good estimate of relative risk.

Q. 3. Write brief note on following: (10 Marks: 2.5*4)

- a) Factorial design of randomized control trials
- b) Relationship between incidence and prevalence
- c) Steps of an outbreak investigation
- d) Boolean operators in using search databases

Q. 4. Differentiate the given terms/ concepts with examples: (10 Marks: 2.5*4)

- a) Secondary prevention and tertiary prevention
- b) Cross-sectional study and ecological study
- c) Intention to treat and per-protocol analysis in randomized controlled trials
- d) Eradication and elimination of the disease

Q. 5. Write short note on following: (10 Marks: 2.5*4)

- a) Sensitivity of a screening test
- b) Iceberg phenomenon in non-communicable diseases
- c) Incubation period
- d) Use of ecological study in the testing of hypothesis

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Time - 3 Hour

MM-50

The question paper contains 1 printed page. Each question carries 10 marks.

Q. 1. Describe the study design of a cross-sectional study using a hypothetical research question to estimate the prevalence of the non-communicable disease. Enumerate five situations where you would like to prefer this study design to address the research question. Discuss advantages and disadvantages of cross-sectional studies. (10 Marks)

OR

Describe the natural history of the disease using an example of any infectious disease such as Zika virus disease. What study designs can be considered to understand the natural history of disease? Discuss the role of natural history of disease in disease prevention and control. Differentiate the natural history of disease and randomized control trial.

Q. 2. A study was conducted to examine risk factors for spontaneous pneumothorax (collapsed lung), including use of car air fresheners. 430 emergency room cases were identified from Florida hospitals in 2005, and 1204 controls were sampled from the patients admitted to the emergency room for broken bones or lacerations. It was found that 110 of the cases and 214 of the controls used a car air freshener regularly. The remaining cases and controls did not use air fresheners in their car. (10 Marks: 2.5*4)

Based on the above information, please solve the following questions:

- a) Prepare 2 by 2 table.
 - b) Calculate the odds ratio
 - c) Write an interpretation of calculated odd ratio.
 - d) Discuss a situation when the odds ratio could be a good estimate of relative risk.
- Q. 3.** Write brief note on following: (10 Marks: 2.5*4)
- a) Nested case-control study
 - b) Relationship between incidence and prevalence
 - c) Validity of screening test
 - d) PICO concept of research question
- Q. 4.** Differentiate the given terms/ concepts with examples: (10 Marks: 2.5*4)
- a) Primary prevention and primordial prevention
 - b) Case report and case series
 - c) Case-control study and retrospective cohort study
 - d) Active and passive immunity
- Q. 5.** Write short note on following: (10 Marks: 2.5*4)
- a) Epidemiological triad
 - b) Epidemic curve
 - c) MeSH terms in PubMed
 - d) Types of controls in Case-Control study

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