

I. Review the article provided vis-à-vis the steps of designing and analyzing case control studies.

[Marimuthu Y, Sarkar S, Kattimani S, Krishnamoorthy Y, Nagappa B. Role of social support and spouse abuse in low birth weight: A Case-control study from Puducherry, India. Indian J Community Med 2019;44:12-6.]

(35 marks)

II. Answer each question briefly and to the point (10 +15 = 25 marks)

1. In a tertiary level teaching hospital, an app based training programme on hand washing practices was implemented for one month as part of Infection Control initiatives. All the consultants and nursing staff of surgical departments (Surgery, Gynaecology, ENT, Ophthalmology) were in the experimental arm and the consultants and nursing staff of medical departments were in the control arm receiving routine on the job training activities. Hand washing practices were compared between the end of study period and baseline.
 - A. What is this study design? Explain why you say so.
 - B. Could the study have been designed in any other way? If so, how? What would you call the study design then? If not, why?
2. A screening test for diabetes mellitus was applied on 100 diabetics and 900 without the disease. If the test had a sensitivity of 70% and a specificity of 90%, what were the chances that a person with a positive and negative test had diabetes mellitus? If the sensitivity was 90% and the specificity was the same, how would the values differ? Demonstrate using 2x2 tables as well.

III. Pick out the most appropriate response from the following (1X10=10 marks)

1. About 60 cases of a certain disease are usually reported in this region per month through out the year, slightly less than the national average. You could best describe the disease as:
 - A. Epidemic
 - B. Endemic
 - C. Exotic
 - D. Pandemic
2. The hallmark feature of an analytic epidemiologic study is:
 - A. Use of an appropriate comparison group
 - B. Laboratory confirmation of the diagnosis
 - C. Publication in a peer-reviewed journal
 - D. Statistical analysis using logistic regression
3. In a famous study, researchers enrolled 41,837 women in 1986 and collected exposure and lifestyle information to assess the relationship between these factors and subsequent occurrence of cancer, is an example of which type of study?
 - A. Analytical
 - B. Case control
 - C. Descriptive
 - D. RCT

4. British investigators conducted a study to compare measles-mumps-rubella (MMR) vaccine history among 1,294 children with pervasive development disorder (e.g., autism and Asperger's syndrome) and 4,469 children without such disorders. (They found no association.) This is an example of which type(s) of study?
- A. Cohort B. Case control C. Descriptive D. RCT
5. A propagated epidemic is usually the result of what type of exposure source?
- A. Point B. Continuous common C. Intermittent common D. Person-to-person
6. When total number of deaths due to measles is presented in relation to the total cases of measles, it is best labelled as
- A. Cause specific death rate B. incidence rate C. Case fatality rate D. Crude death rate
7. The time period of 15 years of smoking 15 cigarettes/day followed by lung cancer reflects which Bradford Hill's criterion for causation?
- A. Biological gradient B. Temporal relationship C. Both D. None
8. In a kindergarten class of 22, there was an index case of measles. 6 children had received measles immunization before. The class is managed by a teacher and two support staff, 2 of whom are immune to measles due to a previous attack. Within two weeks, 6 children had measles. What is the secondary attack rate ?
- A. 35% B. 37% C. 27% D. 30%
9. Public health surveillance includes which activities?
- A. Data collection. B. Data analysis & interpretation C. Data dissemination. D. All
10. In the definition of epidemiology, "determinants" generally includes all except:
- A. Agents B. Causes C. Control measures D. Risk factors