

August 20, 2018

## Epidemiological Research Training Course VIII-1 Home works of study designing

For each example, identify: **D**, the disease(s) or outcomes of interest; **E**, the exposure(s) or associated factor(s) under study; and state whether the **Study Design** described is cohort, case-control, cross-sectional, case report, or secondary data analysis

1. To estimate the healthy characteristics of diabetic patients, graduate students measured the plasma glucose concentration, smoking habits, alcohol consumption, exercise frequency and weight of 2,250 patients at several general hospitals.

**D**

**E**

**Study Design**

2. A cardiologist reported that 5 patients treated with weight-control agents had been diagnosed with ischemic heart disease.

**D**

**E**

**Study Design**

3. Eicosapentaenoic acid (EPA) and Icosapentaenoic acid consumption, and rate of ischemic heart disease were compared among 18 European and Asian countries.

**D**

**E**

**Study Design**

4. Patients with cerebrovascular diseases were compared to subjects who received routine health check up at the same period. Both participants completed questionnaires to ask recent coffee and green tea consumption.

**D**

**E**

**Study Design**

5. In 1990, Japanese epidemiologists examined healthy lifestyles among 1220 newly diagnosed type 2 diabetes mellitus. Over the next 1 year, HbA1c level significantly lowered among patients who reported high exercise frequency (3 times per week).

**D**

**E**

**Study Design**

1. Circle one **correct** answer about cross-sectional studies

- A. Prevalence rate cannot be calculated.
- B. They are usually not expensive and take a relatively short time to complete.
- C. Causal relationship between exposure and disease can be determined.
- D. It is possible to avoid bias adequately.
- E. It is most appropriate for rare disease.

2. Circle one **correct** answer of a major **advantage** of case-control studies

- A. Incidence rates cannot be obtained.
- B. Case-control studies are more efficient for rare diseases.
- C. The time sequence of expose and disease is basically unknown.
- D. It is impossible to examine several exposes in same study.
- E. They are usually expensive and need a long time observation.

3. Circle **two false** answers about ecological studies

- A. Summary measures of exposure and disease frequency are used.
- B. The studies use routinely collected and readily available data.
- C. It is possible to investigate at the individual level.
- D. They are usually expensive and take a relatively long time to complete.
- E. Ethical matters are relatively rare compared to intervention studies.

4. Circle one **correct** answer about cohort studies

- A. The studies require less time and money to be completed.
- B. Ethical matters do not need to be considered much compared to ecological study.
- C. Causal relationship between exposure and disease cannot be determined.
- D. Incidence cannot be calculated, but relative risk can be estimated.
- E. Follow up rate is an important matter to keep the accuracy of the results.

5. Circle one correct answer about intervention studies

- A. The investigator randomly allocates who is and who is not exposed.
- B. The studies are more efficient for rare outcome.
- C. Causal relationship between exposure and disease cannot be determined.
- D. They are usually less expensive and sometimes need short time for completion.
- E. It is difficult to control bias adequately.

6. Chose the approach to analyze obtained data by sex.

- A. Restriction
- B. Adjustment
- C. Random sampling
- D. Stratification
- E. Randomized allocation

7. In a case-control study, researchers recruited hospitalized patients with ischemic heart disease as cases. On the other hand, controls were volunteers who were willing to take comprehensive health check. Which is the most possible bias in the study?

- A. Interviewer bias
- B. Recall bias
- C. Selection bias
- D. Information bias
- E. Reporting bias

8. In an intervention study to lower blood pressure, observers may unconsciously read blood pressure measurements lower in active treatment group compared to control group. Which is the most possible bias in the study?

- A. Recall bias
- B. Information bias
- C. Selection bias
- D. Observer bias
- E. Interviewer bias

9. In the above case (3), which is the most appropriate to control the bias?

- A. Restriction
- B. Stratification
- C. Adjustment
- D. Exclusion
- E. Blinding

10. In a study about stroke, interviewers asked hospitalized patients with stroke and healthy volunteers about family histories, especially stroke. Which is the most possible bias in the study?

- A. Information bias
- B. Recall bias
- C. Observer bias
- D. Selection bias
- E. Interviewer bias