編號： 371

國立成功大學 105 學年度碩士班招生考試試題

系　　所：臨床醫學研究所在職專班

考試科目：流行病學(專班)　　考試日期：0227，節次：3

※ 考生請注意：本試題不可使用計算機。　請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. What is the definition of each of the following terms? (15%)
   (a) Sensitivity
   (b) Specificity
   (c) Kappa statistic
   Are they (sensitivity, specificity, Kappa statistic) measures of validity or reliability? (6%)

2. (a) Please describe the definition of confounder. (6%)
   (b) Please describe how to handle confounding factors in study design and data analysis. (10%)

3. Indicate whether the following statements are true or false. (8%)
   (a) A major advantage of a randomized experimental study is that it rules out self-selection of subjects to the treatment and comparison groups.
   (b) Randomization controls for confounding equally well in both large and small studies.
   (c) Non-compliance in an experimental study makes the compared groups more similar which reduces the ability of the investigator to detect a difference between the groups.
   (d) An important advantage of a placebo-controlled experimental study is that it permits masking of study subjects and study investigators.

4. The investigator plans a cohort study. The study question is: "Does vitamin B_{12} deficiency cause hip fractures in the elderly?" (18%)
   (a) Briefly describe a study plan to address this study with a prospective cohort study.
   (b) Please list advantages and disadvantages of the prospective cohort study.
   (c) What is a major problem resulting from the lack of randomization in a cohort study?

5. The investigator plans a case-control study. The study question is: "How much does a family history of ovarian cancer increase the risk for ovarian cancer?" (18%)
   (a) Briefly describe a study plan to address this study.
   (b) Comment on potential sources of bias in the sampling of cases and controls.
   (c) Do you think the case-control method is an appropriate approach to this study? Discuss the advantages and disadvantages of the case-control design relative to other designs for this study question.

6. A randomized controlled trial compares angioplasty with fibrinolysis for treatment of acute myocardial infarction. The authors state that "analysis was by intention to treat".
   (a) Please describe the major purpose of random assignment in a clinical trials. (5%)
   (b) Why use intention to treat analysis? (4%)

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7. Please describe the purpose of a double-blind study design in randomized trials. (6%)

8. In a study of a disease in which all cases that developed were ascertained, if the relative risk for the association between a factor and the disease is equal to or less than 1.0, then: (4%)
   (a) There is no association between the factor and the disease.
   (b) The factor protects against development of the disease.
   (c) Either matching or randomization has been unsuccessful.
   (d) There is either no association or a negative association between the factor and the disease.