國立成功大學 106 學年度碩士班招生考試試題

系　　所：老年學研究所

考試科目：研究方法與統計

考試日期：0214，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。

一. 選擇題。 (25 分)

1. Which of the following statement is incorrect.

   A. Cronbach's alpha is a coefficient for validity
   B. High internal validity means the study finding may be correct
   C. External validity means the scope the study finding can be applied/referred to
   D. Low reliability means the items in a scale have low correlation
   E. Reliability can be high even the validity is low

2. Which of the following analysis cannot control for covariates?

   A. Survival analysis
   B. Logistic regression
   C. Multiple regression
   D. ANOVA
   E. ANCOVA

3. The strength of an association is one of the criteria for evaluating the cause and effect relationship between an exposure and outcome. Which of the following is a test for association? (Choose one best answer).

   A. Chi-square
   B. T-test
   C. Pearson's correlation
   D. One-way ANOVA
   E. all of the above

4. In a diet and bowel disease case control study, dietary exposures were assessed using a questionnaire with retrospective questions aimed at a period of time 5 years in the past. Which of the following situations of misclassification would make sucrose appear more harmful than it really was? (Choose one best answer)

   A. Controls underreported sucrose intake but cases did not.
   B. Cases underreported sucrose intake but cases did not.
   C. Both cases and controls underreported sucrose intake.
   D. Both cases and controls over-report sucrose intake.
   E. None of the above

5. An investigator examined cases of fetal death in 27,000 pregnancies and classified mothers according to whether they had experienced sexual intercourse within 1 month before delivery. It was found that 11% of the mothers of fetuses that died and 2.5% of the mothers of fetuses that survived had had sexual intercourse during the period. It was concluded that intercourse during the month preceding delivery caused the fetal deaths. This conclusion:

   A. May be incorrect because mothers who had intercourse during the month before childbirth may differ in other important characteristics from those who did not
   B. May be incorrect because there is no comparison group
   C. May be incorrect because prevalence rates are used where incidence rates are needed
   D. May be incorrect because of failure to achieve a high level of statistical significance
   E. All of the above

國立成功大學 106 學年度碩士班招生考試試題

系　　所：老年學研究所

考試科目：研究方法與統計

考試日期：0214，節次：3

二、簡答題。 (75 分)

Based on the results of the three models provided in the table below, please answer questions:

1. What is the outcome measure? In other words, what is the analysis predicting for?
2. What is the analysis used in the analysis?
3. Why the author using three models?
4. What does model 1 mean? In other words, what you can explain from model 1?
5. According to the three models, how do you explain the effect of age?
6. According to the three models, how do you explain the effect of depression?
7. Based on model 3, what are protecting factors for poor health?
8. What variables are treated as categorical variable in this analysis?
9. Can this analysis claim any causation?
10. Can this analysis claim any association?

Table 2
Multivariate analyses for cognitive impairment, OR(95%CI)

	Model 1		Model 2		Model 3	
	OR (95%CI)	p	OR (95%CI)	p	OR (95%CI)	p
Older age	3.05 (2.14–4.35)	<0.001	3.18 (2.22–4.58)	<0.001	2.60 (1.79–3.78)	<0.001
Sex (Male)	0.28 (0.20–0.39)	<0.001	0.32 (0.22–0.46)	<0.001	0.34 (0.25–0.48)	<0.001
Marital status (Single)	1.05 (0.76–1.44)	0.77				
Education (years)						
Elementary school (0–6)	Reference group		Reference group		Reference group	
High school (7–12)	0.46 (0.25–0.86)	0.01	0.39 (0.21–0.70)	0.002	0.47 (0.26–0.85)	0.012
College (>12)	0.35 (0.10–1.19)	0.09	0.28 (0.09–0.87)	0.029	0.30 (0.10–0.95)	0.040
Ethnicity						
Fuklenese	Reference group					
Hakka	0.82 (0.55–1.22)	0.33				
Mainlander	0.61 (0.34–1.06)	0.07				
Smoking			1.01 (0.66–1.54)	0.955		
Alcohol drinking			0.74 (0.44–1.24)	0.262		
Depression			1.40 (1.02–1.94)	0.039	1.18 (0.81–1.71)	0.391
Hypertension			0.98 (0.68–1.41)	0.945		
Diabetes			1.82 (1.15–2.88)	0.010	1.70 (1.06–2.74)	0.029
Cardiovascular disease			1.22 (0.82–1.80)	0.312		
Stroke			2.71 (1.25–5.86)	0.011	2.36 (1.06–5.26)	0.036
ADL disability					1.96 (0.85–4.54)	0.116
IADL disability					2.06 (1.38–3.09)	0.029
Functional limitation					1.42 (0.96–2.13)	0.082
Self perceived health						
Good					0.94 (0.57–1.58)	0.836
Fair					1.12 (0.78–1.60)	0.534
Poor					reference group	
Joining organized group activity					0.98 (0.71–1.35)	0.090