

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (COMMUNITY MEDICINE/COMMUNITY DENTISTRY) PART I
EXAMINATION – SEPTEMBER 2012

Date :- 3rd September 2012

Time :- 1.30 p.m. – 3.30 p.m.

PAPER I

Answer **all four** questions.

Answer each question in a separate book.

1. A case control study was conducted to determine the effects of labour room procedures on neonatal sepsis in a national study. Twelve (12) variables were selected for the multiple logistic regression analysis, based on their bivariate p-value of <0.2 . Model development was done with 'purposeful selection' method. Interaction effects were also assessed.

The results are given below:

Multiple logistic regression results (final model) for labour room procedures on neonatal sepsis

Exposure variables	Beta coefficient	Standard Error	Wald Test
>3 vaginal examinations before delivery	0.93	0.27	11.6
>10 hours in the labour room before delivery	0.97	0.44	4.8
Low birth weight	1.48	0.25	33.7
Sex – female	-0.52	0.20	7.2

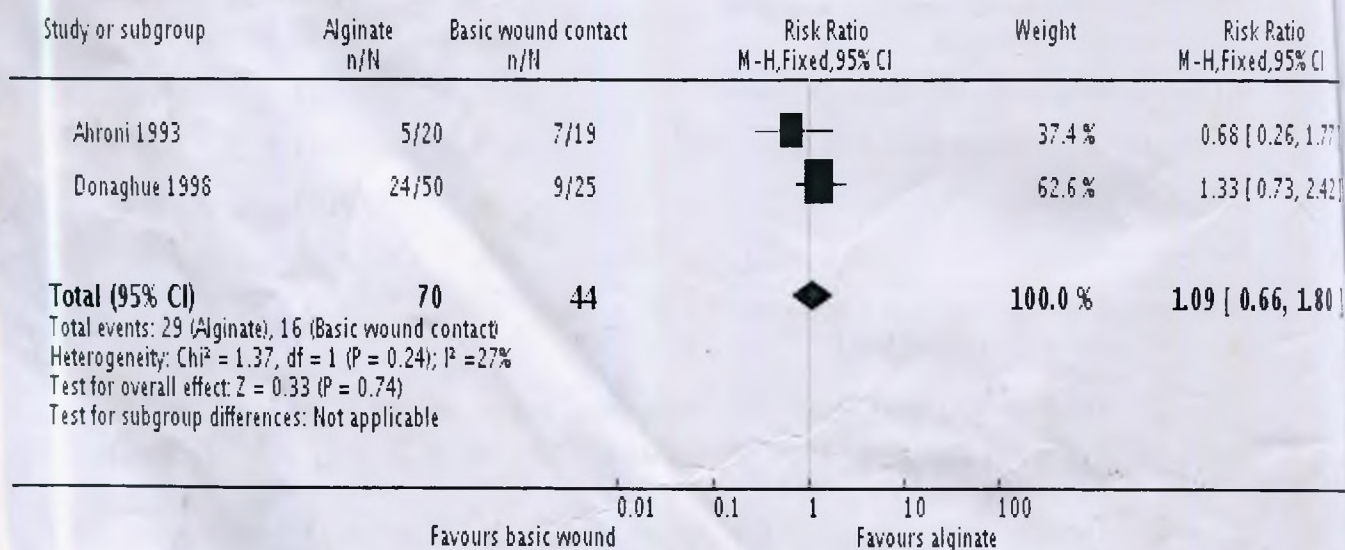
Hosmer and Lemeshow Test: Chi-square = 1.28; p value = 0.73

- 1.1. Briefly explain why the variables were selected for the multivariate analysis, based on their bivariate p-value of <0.2 . (15 marks)
- 1.2. Briefly explain why the 'purposeful selection' was better than other selection methods for this study. (15 marks)
- 1.3. Briefly explain the reason for assessing interaction effects. (10 marks)

Contd..../2-

- 1.4. Calculate and interpret the adjusted odds ratio and its 95% confidence interval for the variable, '>3 vaginal examinations before delivery'.
(30 marks)
- 1.5. Would you accept this model? Give reasons for your answer.
(10 marks)
- 1.6. As the Director of Maternal Health Services, would you use the findings of the study to improve labour room practices? Give reasons for your answer.
(20 marks)
2. Foot ulcers in people with diabetes mellitus are a common and serious global health issue. Wound dressings are widely used to treat foot ulcers in people with diabetes. There are many types of dressings that can be used, which also vary considerably in cost. The following figure illustrates result of a systematic review.

Review: Alginate dressings for healing diabetic foot ulcers
 Comparison: 1 Alginate dressing compared with basic wound contact dressing
 Outcome: 1 Number of ulcers healed



- 2.1. State the clinical question that the above review addressed. (10 marks)
- 2.2. Briefly explain how you would search for primary studies for systematic reviews.
(20 marks)

Contd..../3-

- 2.3. Briefly explain the criteria used to assess the quality of primary studies included in systematic reviews. (20 marks)
- 2.4. Briefly explain how you would assign weights to calculate the pooled risk ratio. (10 marks)
- 2.5. Comment on heterogeneity of the studies included in the above review. (20 marks)
- 2.6. State the conclusions you would draw from this review. (20 marks)
3. In a study, 120 male patients with nasal cancer were matched with 120 controls. Being a rare disease, the cases were collected over a 30-year period from a clinic. Smoking status was ascertained from both cases and controls. Classification of pairs by disease outcome and exposure showed that 31 case control pairs were smokers, in thirty (30) pairs, controls were non smokers and the cases were smokers and 52 case control pairs were non smokers.
- 3.1. Tabulate this data. (10 marks)
- 3.2. Calculate the risk of nasal cancer from smoking and name the parameter you calculated. (10 marks)
- 3.3. Test the significance of the association. (05 marks)
- 3.4. Display the data in a Table format as for an unmatched case control study. (05 marks)
- 3.5. Calculate the risk of nasal cancer from smoking for data from the Table you drew in 3.4. (05 marks)
- 3.6. Interpret the difference between the risk estimates you obtained from Q 3.2. and Q 3.5. (15 marks)
- 3.7. List two (02) variables for which you would match the cases to the controls. (10 marks)
- 3.8. State the advantages and disadvantages of matching. (15 marks)

Contd..../4-

- 3.9. The researcher decides to carry out a multivariate analysis for this study. Which multivariate model would you use? (10 marks)
- 3.10. State the criteria you would use to select controls for this study, giving reasons. (15 marks)
4. Write short notes on –
- 4.1. Methods of economic evaluation. (40 marks)
 - 4.2. Focus group discussion. (30 marks)
 - 4.3. Cross over trials. (30 marks)

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MD (COMMUNITY MEDICINE/COMMUNITY DENTISTRY) PART I
EXAMINATION – SEPTEMBER 2012

Date :-4th September 2012

Time :- 9.00 a.m. – 11.00 a.m.

PAPER II

Answer **all four** questions.

Answer each question in a separate book.

1. A researcher wants to use a set of community-based volunteers as data collectors to assess the problem of intimate partner violence (IPV) among married women of reproductive age in an area.

He wishes to validate a locally developed scale to identify IPV, using psychiatrist diagnosis as the gold standard.

The community volunteers make their assessment using this scale and refer those who test positive to a psychiatrist for making a definitive diagnosis.

- 1.1. State the type of validity that is being assessed. (10 marks)
- 1.2. Name and briefly describe three (03) other types of validity that could be measured. (15 marks)
- 1.3. Discuss a major methodological flaw in the above study design. (20 marks)
- 1.4. Use plausible assumptions and calculate the sample size for this study. (25 marks)
- 1.5. List and briefly explain five (05) strategies which can be used for addressing mental health problems at a community level. (30 marks)

Contd..../2-

2. List and explain the steps in planning a programme for control of cardiovascular disease in a district. (100 marks)
3. Design a plan for evaluation of the dengue control programme in Sri Lanka. (100 marks)
4. Write short notes on:
 - 4.1. Receiver operating characteristics (ROC) curve. (40 marks)
 - 4.2. Standardized mortality ratio. (30 marks)
 - 4.3. Plagiarism. (30 marks)