

**POSTGRADUATE INSTITUTE OF MEDICINE**  
**UNIVERSITY OF COLOMBO**

**MD (COMMUNITY MEDICINE)/COMMUNITY DENTISTRY) THEORY**  
**EXAMINATION – JULY 2022**

Date:- 11<sup>th</sup> July 2022

Time:- 1.00 p.m. – 3.00 p.m.

**PAPER I**

Answer **all four (04)** question.

Answer each question in a separate book.

1. A study was carried out among women with Polycystic Ovary Syndrome (PCOS) and randomly selected patients who did not have a documentation of PCOS (unexposed group).

	PCOS (Exposed)	Controls (Unexposed)
Total number of participants	63,210	121,064
Person-years	297,842	576,065
Incident Non-Alcoholic Fatty Liver Disease (NAFLD) (%)	274 (0.43)	222 (0.18)
Incidence rates per 10,000 person-years	A	B
Approximate hazard ratio (HR)	C	
95% Confidence Interval (CI) of HR	1.99 to 2.84	
Adjusted HR (95% CI)	2.23	

- 1.1. Calculate the following:
- 1.1.1. Incidence rate of NAFLD per 10,000 person-years for the exposed. (10 marks)
- 1.1.2. Incidence rates of NAFLD per 10,000 person-years for the unexposed. (10 marks)
- 1.1.3. Hazard ratio. (15 marks)
- 1.2. Discuss the reason for choosing the hazard ratio as opposed to odds ratio or relative risk. (20 marks)
- 1.3. Describe the reason for calculating the adjusted hazard ratio. (15 marks)
- 1.4. Define sensitivity analysis. (10 marks)
- 1.5. Discuss the advantage(s) of performing a sensitivity analysis by restricting the analysis only to incident cases as opposed to prevalent cases. (20 marks)

2. You have been requested to design a Randomized Controlled Trial to compare the efficacy of 2 delivery modalities (mobile phone or fixed computer) of a Cognitive Behavioural Therapy intervention for the treatment of depression. Adults with major depression will be recruited to access the programme using a mobile app or a computer. Participants are expected to complete 6 lessons and weekly homework assignments over a period of 3 months. The primary outcome measure is the Depression score using the Patient Health Questionnaire-9 (PHQ-9) which is a brief 9-item self-report scale with scores ranging from 0 to 27 (from the least to the highest level of depression).

2.1. Define the study participants indicating two (02) inclusion and two (02) exclusion criteria. (20 marks)

2.2. The baseline mean PHQ score is 13 according to past studies. At the end of the intervention, a mean PHQ score of 8.0 (SD=1.8) in the mobile phone group and 9.0 (SD=1.8) in the computer group is expected. At least 20% participants would be lost-to-follow up.

Calculate the number to be recruited using the equation given below, listing all parameters used in the calculation. ( $f_{\alpha\beta} = 10.5$  for  $\alpha$  error = 0.05 and  $\beta$  error = 0.1) (40 marks)

$$n = 2 \left\{ \frac{f(\alpha, \beta) \sigma^2}{\delta^2} \right\}$$

2.3. Discuss ethical issues relevant to the above study. (25 marks)

2.4. List three (03) conditions that you would consider for early termination of this study. (15 marks)

3. Self-interest and altruism (selfless concern for the wellbeing of others) are two diametrically opposite features in a professional's life.

3.1. Discuss how a community physician can manage these two opposing interests to become a successful professional. (50 marks)

3.2. The Declaration of Geneva of the World Medical Association binds the physician with the words, "The health of my patient will be my first consideration".

Discuss this statement in relation to doctors doing private practice in addition to their full-time duty in the government hospital. (50 marks)

4. A Research team is planning to conduct a study to assess the prevalence of “risk of abuse” among elders in a district in Sri Lanka. As there was no validated tool, it was decided to translate and validate a tool designed in the UK to assess physical, psychological, verbal, and financial abuse into Sinhala. The tool generates a risk score.

4.1. Describe ways in which you could validate this tool having 25 items.  
(40 marks)

4.2. Explain how you would assess test-retest reliability and internal consistency.  
(30 marks)

After validating the tool, a community survey was conducted.

4.3. Describe four (04) methods that could be used to assess the normality of risk scores obtained from the community survey.  
(30 marks)



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**EXAMINATION – JULY 2022**

**Date:-** 12<sup>th</sup> July 2022

**Time:-** 9.00 a.m. – 11.00 a.m.

**PAPER II**

Answer **all four (04)** question.

Answer each question in a separate book.

1.

- 1.1. List five (05) functions related to management of Human Resources in Health. (10 marks)
- 1.2. Outline how information systems support strengthening of human resources at national and sub-national levels. (50 marks)
- 1.3. Describe the role played by the World Health Organization to improve human resources for health across member states. (40 marks)

2. The economic downturn in Sri Lanka is posing challenges to maintain essential healthcare and universal health coverage. The government is considering facilitating professionals to obtain overseas employment.

- 2.1. Discuss how it will affect health services to the public. (30 marks)

The Ministry of Health is considering that acceleration of primary care reforms is beneficial in the current context.

- 2.2. Give two (02) interventions that can improve rural retention of human resources in primary care institutions. (20 marks)
- 2.3. Describe two (02) other policy interventions (other than Human Resource for Health) supporting strengthening of primary care. (50 marks)

Contd...../2-

3.

- 3.1. Discuss "responsiveness" in relation to health systems. (50 marks)
- 3.2. Explain two (02) common errors that should be avoided when defining a problem in the process of policy analysis. (30 marks)
- 3.3. List advantages of continuous coding in qualitative data analysis. (20 marks)

4.

- 4.1. Define advocacy. (05 marks)
- 4.2. As a district level public health manager, explain two (02) methods of advocating school principals on implementation of the school canteen circular. (20 marks)
- 4.3. Discuss the following statement in relation to health promotion.  
"Process evaluation is equally important as outcome evaluation"  
(40 marks)
- 4.4. Many researchers claim that Vitamin D deficiency is a public health issue in Sri Lanka. As the national programme manager, describe how you would plan a Social Behaviour Change Communication (SBCC) campaign to address this issue. (35 marks)