**Lao Tropical and Public Health Institute**

**Master of Tropical Medicine and International Health**

**TM-CM02 Biostatistics**

**Assignment 2025 Semester 1**

|  |  |
| --- | --- |
| **Name:** |  |
| **Promotion year:** | **P2\_** |

There are five questions with a total of 25 marks.

An electronic copy of your answers (in PDF format) is due by email ([kiesha.prem@nus.edu.sg](mailto:kiesha.prem@nus.edu.sg)) by **12 noon on Friday, 21st February 2023**.

A community-based cross-sectional survey of 10,022 respondents aged 40 years and above in Singapore was conducted to examine the factors associated with cardiovascular risk.

**Data collected**

1. Age - in completed years **(in integers)**
2. Gender **(Male/Female)**
3. BMI – measured height and weight **(calculated to one decimal place)**
4. Ethnicity (**Chinese/Malay/Indian)**
5. Smoking status – self-reported by participants **(Daily smoker/Occasional smoker/Ex-smoker/Never smoker)**
6. LDL cholesterol – measured from fasting blood samples obtained from participants **(available up to to two decimal places)**
7. Presence of cardiovascular disease– self-reported by participants as having being diagnosed by a physician **(Yes/No)**

**Question 1 (10 marks)**

1. Populate the table below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Cardiovascular disease (CVD)** | | | |
|  | | **With CVD**  **(Total N =)** | **Without CVD**  **(Total N=)** | **p-value** | **Test used** |
|  | | Mean ± SD | Mean ± SD |  |  |
| Age (in years) | |  |  |  |  |
| BMI (kg/m2) | |  |  |  |  |
| LDL cholesterol levels (mmol/L) | |  |  |  |  |
|  |  | N (%) | N (%) |  |  |
| Gender | Female |  |  |  |  |
| Male |  |  |
| Ethnicity | Chinese |  |  |  |  |
| Malay |  |  |
| Indian |  |  |
| Smoking status | Daily smoker |  |  |  |  |
| Occasional smoker |  |  |
| Ex-smoker |  |  |
| Never smoker |  |  |

**Question 2 (5 marks)**

1. Is BMI associated with CVD? Populate your results in the table below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Cardiovascular disease (CVD)** | | | |
|  | | **With CVD**  **(Total N =)** | **Without CVD**  **(Total N=)** | **p-value** | **Test used** |
|  |  | N (%) | N (%) |  |  |
| Overweight | Yes |  |  |  |  |
| No |  |  |

**Question 3 (5 marks)**

1. Is smoking associated with BMI? Populate your results in the table below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Overweight** | | | |
|  | | **Yes**  **(Total N =)** | **No**  **(Total N=)** | **p-value** | **Test used** |
|  |  | N (%) | N (%) |  |  |
| Smoker | Yes |  |  |  |  |
| No |  |  |

**Question 4 (5 marks)**

1. Is smoking associated with BMI? Populate your results in the table below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Cardiovascular disease (CVD)** | | | |
|  | | **With CVD**  **(Total N =)** | **Without CVD**  **(Total N=)** | **p-value** | **Test used** |
|  |  | N (%) | N (%) |  |  |
| Smoker | Yes |  |  |  |  |
| No |  |  |

**Question 5 (10 marks)**

5. Is there a linear association between BMI and LDL cholesterol levels? Report the correlation coefficient and p-value of correlation.