

Supplementary Material S1 – Survey Questions

Date: (DD/MM/YYYY)

Participant ID:

PARTICIPANTS' QUESTIONNAIRE

SECTION 1. BIODATA AND DEMOGRAPHICS

Information collected for in this questionnaire will be kept strictly confidential and only aggregated data will be published. NRIC is collected to allow the researcher to correlate the responses with medical notes.

Could you tell us a bit more about yourself?

1001. What is your current Marital Status?

- 1) Single 4) Divorced
 2) Married 5) Widowed
 3) Separated 9) Refused
 0) Others, Specify: _____

1002. What is the highest level of education you have attained?

- 1) No formal education
 2) Primary / PSLE
 3) Secondary / 'N' level / 'O' level
 4) ITE
 5) 'A' level
 6) Diploma
 7) Degree / Master / PhD
 9) Refused
 0) Others, Specify: _____

1003. What type of house do you currently live in?

- 1) HDB 1-Room / 2-Room flat

- 2) HDB 3 Room flat
- 3) HDB 4 Room flat
- 4) HDB 5 Room flat
- 5) Executive / HUDC
- 6) Condominium / Private flat
- 7) Landed or others
- 9) Refused
- 0) Others, please specify: _____

1004. What is your current employment status:

- 1) Employed
- 2) Homemaker
- 3) Student
- 4) Retired
- 5) Unemployed
- 0) Refused

1005. Sex:

- 1) Male 2) Female
- Go to **SECTION 2** → Go to **SECTION 3**

END OF SECTION 1.

SECTION 2. DIABETES SURVEY – MALES

The next few questions are about diabetes.

2001. Have you ever been told by a doctor that you have diabetes?

- 1) Yes → Continue to Q2002
- 2) No → Skip to Q2004
- 0) Not sure → Skip to Q2004

2002. Which year were you diagnosed with diabetes, roughly?

Y	Y	Y	Y

2003. **Before having diabetes**, have you ever been told by a doctor to have pre-diabetes, or elevated sugars in the blood, but not to the extent of having diabetes?

- 1) Yes → Skip to 2005
- 2) No → Go to SECTION 4
- 0) Not sure → Go to SECTION 4

2004. Have you ever been told by a doctor to have pre-diabetes, or elevated sugars in the blood but not to the extent of having diabetes?

- 1) Yes → Continue to Q2005
- 2) No → Go to SECTION 4
- 0) Not sure → Go to SECTION 4

2005. Which year were you first told to have pre-diabetes, roughly?

Y	Y	Y	Y

END OF SECTION 2. GO TO SECTION 4.

SECTION 3. DIABETES SURVEY – FEMALES

The next few questions are about diabetes.

3001. Have you ever been told by a doctor that you have gestational diabetes, or diabetes when you were pregnant?

- 1) Yes → Continue to 3002
- 2) No → Skip to 3003
- 0) Never Pregnant or Not sure → Skip to 3003

3002. Which year were you first told to have gestational diabetes, roughly?

Y	Y	Y	Y

3003. **Outside of pregnancy**, have you ever been told by a doctor that you have diabetes?

- 1) Yes → Continue to Q3004
- 2) No → Skip to Q3006
- 0) Not sure → Skip to Q3006

3004. Which year were you diagnosed with diabetes, roughly?

Y	Y	Y	Y

3005. **Before having diabetes**, have you ever been told by a doctor to have pre-diabetes, or elevated sugars in the blood, but not to the extent of having diabetes?

- 1) Yes → Skip to 3007
- 2) No → Go to SECTION 4
- 0) Not sure → Go to SECTION 4

3006. Have you ever been told by a doctor to have pre-diabetes, or elevated sugars in the blood but not to the extent of having diabetes?

1) Yes → Continue to Q3007

2) No → Go to SECTION 4

0) Not sure → Go to SECTION 4

3007. Which year were you first told to have pre-diabetes, roughly?

Y	Y	Y	Y

END OF SECTION 3. GO TO SECTION 4

SECTION 4. GENERAL HEALTH SURVEY

The next few questions are to find out about your health, in general.

4001. Do you have other chronic medical problems, requiring regular follow up with a medical doctor?

1) Yes → **Continue to Q4002**

2) No → **END**

4002. Which of the following chronic medical conditions are you following up with a doctor for? (Select all that apply)

1) Hypertension or High Blood Pressure

2) Hyperlipidaemia or High Blood Cholesterol

3) Cardiovascular or Heart Disease

4) Cerebrovascular disease, Stroke or Transient Ischaemic Attack (TIA)

5) Obesity Please specify your height _____ cm, and weight _____ kg.

5) Others Please specify:

END OF QUESTIONNAIRE.

Thank you very much for your time.

1. **PSLE:** Primary School Leaving Examination
2. **ITE:** Institute of Technical Education
3. **GCE N-Level:** Singapore-Cambridge General Certificate of Education Normal Level
4. **GCE O-Level:** Singapore-Cambridge General Certificate of Education Ordinary Level
5. **GCE A-Level:** Singapore-Cambridge General Certificate of Education Advanced Level
6. **HDB:** Housing and Development Board
7. **HUDC:** Housing and Urban Development Company

Supplementary Material S2 – Multivariable logistic regression model

The multivariable logistic regression model can be written as

$$\ln\left(\frac{\pi_i}{1 - \pi_i}\right) = \beta_0 + \beta_1 X_{1i} + \dots + \beta_n X_{ni}$$

Where:

1. π_i represents the probability of $Y_i = 1$, given the observations X_{1i}, \dots, X_{ni}
i.e. $\pi_i = P(Y_i = 1 \mid X_{1i}, \dots, X_{ni})$
2. Y_i represents the i -th observation of the dependent variable Y
3. X_{1i}, \dots, X_{ni} are the i -th observation of the independent variables X_1, \dots, X_n

Supplementary Material S3 – Relationship between Kappa and PABAK

The relationship between Kappa and PABAK is represented by the following formula¹:

$$PABAK = \kappa + (1 - \kappa) PI^2 + (\kappa - 1) BI^2$$

Where:

1. PABAK: prevalence adjusted, bias adjusted Kappa
2. κ : Kappa
3. PI: prevalence index
4. BI: bias index

When the prevalence index is high, Kappa, κ , is lower than when prevalence index is low². Inspecting the formula above, we see that PABAK will adjust κ upwards (i.e. $(1 - \kappa) PI^2$ is a positive term, assuming $\kappa < 1$) to adjust for the effect of prevalence as described.

When the bias index is high, Kappa, κ , is higher than when bias index is low². To adjust for this, PABAK will adjust κ downwards (i.e. $(\kappa - 1) BI^2$ is a negative term, assuming $\kappa < 1$).

¹ Byrt T, Bishop J, Carlin JB. Bias, prevalence and kappa. *Journal of Clinical Epidemiology* 1993;46:423-29.

² Sim J, Wright CC. The Kappa Statistic in Reliability Studies: Use, Interpretation, and Sample Size Requirements. *Physical Therapy* 2005;85:257-68.