

Table S3-A and S3-B

The results of the binomial logistic regression analysis that used all variables in forced entry method.

**Table S3-A.** Unadjusted and adjusted odds ratio for non-participation in the general health examination and cancer screening.

|   | General health examination<br>(n=8,438) |                        | Lung cancer screening<br>(n=6,042) |                        | Colorectal cancer screening<br>(n=6,030) |                        |
|---|---|------------------------|------------------------------------|------------------------|--|------------------------|
|   | Unadjusted OR<br>(95%CI)                | Adjusted OR<br>(95%CI) | Unadjusted OR<br>(95%CI)           | Adjusted OR<br>(95%CI) | Unadjusted OR<br>(95%CI)                 | Adjusted OR<br>(95%CI) |
| Disability  |   |                        |                                    |                        |  |                        |
| No-need any support or supervision  | 1 ( Ref. )                              | 1 ( Ref. )             | 1 ( Ref. )                         | 1 ( Ref. )             | 1 ( Ref. )                               | 1 ( Ref. )             |
| Need any support or supervision   | 2.81 ( 1.92,4.11 )                      | 1.73 ( 1.14,2.62 )     | 2.30 ( 1.46,3.62 )                 | 1.56 ( 0.96,2.51 )     | 2.26 ( 1.40,3.64 )                       | 1.78 ( 1.08,2.94 )     |
| Sex   |   |                        |                                    |                        |  |                        |
| Male  | 1 ( Ref. )                              | 1 ( Ref. )             | 1 ( Ref. )                         | 1 ( Ref. )             | 1 ( Ref. )                               | 1 ( Ref. )             |
| Female  | 1.68 ( 1.53,1.86 )                      | 1.71 ( 1.51,1.93 )     | 1.60 ( 1.44,1.77 )                 | 1.55 ( 1.37,1.76 )     | 1.44 ( 1.30,1.60 )                       | 1.53 ( 1.36,1.74 )     |
| Age (years)   |   |                        |                                    |                        |  |                        |
| 65–74   | 1 ( Ref. )                              | 1 ( Ref. )             | 1 ( Ref. )                         | 1 ( Ref. )             | 1 ( Ref. )                               | 1 ( Ref. )             |
| 40–64   | 0.65 ( 0.57,0.73 )                      | 1.38 ( 1.18,1.61 )     | 0.89 ( 0.79,0.99 )                 | 1.40 ( 1.2,1.62 )      | 0.95 ( 0.85,1.06 )                       | 1.22 ( 1.05,1.41 )     |
| 20–39   | 0.93 ( 0.82,1.07 )                      | 2.13 ( 1.75,2.6 )      | – ( – )                            | – ( – )                | – ( – )                                  | – ( – )                |
| Marital status  |   |                        |                                    |                        |  |                        |
| Married   | 1 ( Ref. )                              | 1 ( Ref. )             | 1 ( Ref. )                         | 1 ( Ref. )             | 1 ( Ref. )                               | 1 ( Ref. )             |
| Single  | 1.37 ( 1.22,1.53 )                      | 1.37 ( 1.18,1.58 )     | 1.50 ( 1.27,1.78 )                 | 1.47 ( 1.22,1.76 )     | 1.72 ( 1.44,2.05 )                       | 1.64 ( 1.36,1.98 )     |
| Divorced/widowed  | 1.35 ( 1.14,1.59 )                      | 1.04 ( 0.86,1.25 )     | 1.38 ( 1.17,1.63 )                 | 1.10 ( 0.92,1.31 )     | 1.52 ( 1.28,1.80 )                       | 1.20 ( 1,1.43 )        |
| Educational qualification   |   |                        |                                    |                        |  |                        |
| Vocational school/junior college/community(technical) college/university/post graduate school | 1 ( Ref. )                              | 1 ( Ref. )             | 1 ( Ref. )                         | 1 ( Ref. )             | 1 ( Ref. )                               | 1 ( Ref. )             |
| High school   | 1.47 ( 1.32,1.63 )                      | 1.33 ( 1.19,1.49 )     | 1.43 ( 1.28,1.59 )                 | 1.22 ( 1.09,1.37 )     | 1.52 ( 1.37,1.70 )                       | 1.33 ( 1.19,1.5 )      |
| Primary/junior high school  | 2.71 ( 2.30,3.20 )                      | 2.02 ( 1.67,2.45 )     | 1.90 ( 1.59,2.27 )                 | 1.41 ( 1.16,1.72 )     | 2.27 ( 1.89,2.73 )                       | 1.82 ( 1.48,2.23 )     |
| Subjective financial state  |   |                        |                                    |                        |  |                        |
| Wealthy   | 1 ( Ref. )                              | 1 ( Ref. )             | 1 ( Ref. )                         | 1 ( Ref. )             | 1 ( Ref. )                               | 1 ( Ref. )             |
| Not poor not wealthy  | 1.34 ( 1.04,1.71 )                      | 1.17 ( 0.9,1.52 )      | 1.59 ( 1.25,2.01 )                 | 1.44 ( 1.12,1.84 )     | 1.63 ( 1.29,2.05 )                       | 1.43 ( 1.13,1.82 )     |

|   |                    |                    |                    |                    |                    |                    |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Poor  | 1.99 ( 1.56,2.54 ) | 1.62 ( 1.25,2.1 )  | 2.25 ( 1.78,2.83 ) | 1.91 ( 1.49,2.44 ) | 2.39 ( 1.90,2.99 ) | 1.92 ( 1.52,2.44 ) |
| Health insurance                                    |                    |                    |                    |                    |                    |                    |
| Employee insurance                                  | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         |
| National Health Insurance                           | 2.46 ( 2.22,2.72 ) | 1.66 ( 1.45,1.91 ) | 1.78 ( 1.60,1.98 ) | 1.38 ( 1.19,1.59 ) | 1.50 ( 1.35,1.67 ) | 1.25 ( 1.08,1.45 ) |
| Other   | 4.33 ( 3.22,5.83 ) | 2.94 ( 2.11,4.09 ) | 3.45 ( 2.44,4.90 ) | 2.53 ( 1.74,3.68 ) | 2.87 ( 2.00,4.11 ) | 2.06 ( 1.4,3.03 )  |
| Employment status                                   |                    |                    |                    |                    |                    |                    |
| Employed  | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         |
| Self-employed                                       | 3.14 ( 2.61,3.79 ) | 3.54 ( 2.83,4.41 ) | 1.86 ( 1.54,2.26 ) | 1.98 ( 1.58,2.48 ) | 1.58 ( 1.30,1.92 ) | 1.69 ( 1.34,2.12 ) |
| Employed(other)                                     | 2.32 ( 1.92,2.79 ) | 2.54 ( 2.07,3.13 ) | 1.40 ( 1.16,1.69 ) | 1.44 ( 1.17,1.76 ) | 1.17 ( 0.97,1.41 ) | 1.21 ( 0.99,1.48 ) |
| Unemployed  | 3.37 ( 3.02,3.76 ) | 3.15 ( 2.75,3.62 ) | 2.13 ( 1.90,2.40 ) | 2.00 ( 1.72,2.32 ) | 1.50 ( 1.33,1.68 ) | 1.37 ( 1.18,1.6 )  |
| Kessler Psychological Distress Scale                |                    |                    |                    |                    |                    |                    |
| Normal<br>(total score =< 4)                        | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         |
| Mild illness<br>(5 ≤ total score ≤ 12)              | 1.17 ( 1.05,1.31 ) | 1.11 ( 0.98,1.26 ) | 1.16 ( 1.03,1.31 ) | 1.08 ( 0.95,1.23 ) | 1.22 ( 1.08,1.37 ) | 1.15 ( 1.01,1.31 ) |
| Severe illness<br>(13 ≤ total score)                | 1.36 ( 1.07,1.74 ) | 1.08 ( 0.82,1.42 ) | 1.40 ( 1.04,1.89 ) | 1.09 ( 0.79,1.51 ) | 1.41 ( 1.04,1.91 ) | 1.17 ( 0.84,1.62 ) |
| Constant visit to hospital†                         |                    |                    |                    |                    |                    |                    |
| Yes (constant visit)                                | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         |
| No (no-constant visit)                              | 1.22 ( 1.11,1.35 ) | 1.57 ( 1.39,1.76 ) | 1.26 ( 1.14,1.39 ) | 1.49 ( 1.33,1.67 ) | 1.39 ( 1.26,1.54 ) | 1.57 ( 1.4,1.76 )  |
| Subjective health status                            |                    |                    |                    |                    |                    |                    |
| Good  | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         |
| Normal  | 1.04 ( 0.94,1.16 ) | 1.00 ( 0.89,1.12 ) | 1.05 ( 0.94,1.17 ) | 1.01 ( 0.9,1.14 )  | 1.05 ( 0.94,1.17 ) | 1.01 ( 0.9,1.14 )  |
| Bad   | 1.37 ( 1.17,1.61 ) | 1.17 ( 0.97,1.42 ) | 1.35 ( 1.14,1.60 ) | 1.17 ( 0.96,1.42 ) | 1.27 ( 1.07,1.50 ) | 1.12 ( 0.92,1.36 ) |
| Alcohol consumption                                 |                    |                    |                    |                    |                    |                    |
| Never or quit drinking                              | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         |
| Social drinker/low-risk group (> 0 to ≤ 100 g/week) | 0.66 ( 0.58,0.74 ) | 0.80 ( 0.7,0.91 )  | 0.65 ( 0.57,0.74 ) | 0.78 ( 0.68,0.89 ) | 0.66 ( 0.58,0.75 ) | 0.76 ( 0.66,0.87 ) |
| Middle- risk drinking (> 100 to ≤ 350 g/week)       | 0.57 ( 0.50,0.66 ) | 0.80 ( 0.68,0.94 ) | 0.61 ( 0.54,0.70 ) | 0.81 ( 0.7,0.94 )  | 0.71 ( 0.62,0.81 ) | 0.88 ( 0.76,1.02 ) |
| High-risk drinking (> 350 g/week)                   | 0.80 ( 0.60,1.07 ) | 1.06 ( 0.77,1.45 ) | 0.88 ( 0.65,1.18 ) | 1.05 ( 0.77,1.45 ) | 0.77 ( 0.57,1.04 ) | 0.81 ( 0.59,1.12 ) |

| Smoking habit         |         |   |             |      |   |             |         |   |             |      |   |             |         |   |             |
|-----------------------|---------|---|-------------|------|---|-------------|---------|---|-------------|------|---|-------------|---------|---|-------------|
| Never/ex-smoker       | 1       | ( | Ref. )      | 1    | ( | Ref. )      | 1       | ( | Ref. )      | 1    | ( | Ref. )      | 1       | ( | Ref. )      |
| Current smoker        | 1.09    | ( | 0.97,1.22 ) | 1.32 |   | 1.15,1.51 ) | 1.13    |   | 1.00,1.27 ) | 1.28 |   | 1.12,1.47 ) | 1.40    |   | 1.24,1.59 ) |
| Model chi square test | P<0.001 |   |             |      |   |             | P<0.001 |   |             |      |   |             | P<0.001 |   |             |
| Hosmer-Lemeshow test  | P=0.384 |   |             |      |   |             | P=0.064 |   |             |      |   |             | P=0.911 |   |             |

Note: OR, odds ratio; CI, confidence interval; Ref., reference

† No clear definition regarding the frequency of visit is provided in the questionnaire.

**Table S3-B** Unadjusted and adjusted odds ratio for non-participation in the cancer screening.

|                                    | Gastric cancer screening<br>(n=4,318) |                        | Cervical cancer screening<br>(n=4,261) |                        | Breast cancer screening<br>(n=3,098) |                        |
|------------------------------------|---------------------------------------|------------------------|--|------------------------|--------------------------------------|------------------------|
|                                    | Unadjusted OR<br>(95%CI)              | Adjusted OR<br>(95%CI) | Unadjusted OR<br>(95%CI)               | Adjusted OR<br>(95%CI) | Unadjusted OR<br>(95%CI)             | Adjusted OR<br>(95%CI) |
| Disability                         |                                       |                        |  |                        |                                      |                        |
| No-need any support or supervision | 1                                     | ( Ref. )               | 1                                      | ( Ref. )               | 1                                    | ( Ref. )               |
| Need any support or supervision    | 2.71                                  | ( 1.56,4.70 )          | 2.27                                   | ( 1.27,4.05 )          | 2.74                                 | ( 1.33,5.62 )          |
| Sex                                |                                       |                        |  |                        |                                      |                        |
| Male                               | 1                                     | ( Ref. )               | -                                      | ( - )                  | -                                    | ( - )                  |
| Female                             | 1.53                                  | ( 1.35,1.72 )          | -                                      | ( - )                  | -                                    | ( - )                  |
| Age (years)                        |                                       |                        |  |                        |                                      |                        |
| 65–74                              | -                                     | ( - )                  | 1                                      | ( Ref. )               | 1                                    | ( Ref. )               |
| 40–64                              | -                                     | ( - )                  | 0.44                                   | ( 0.38,0.52 )          | 0.57                                 | ( 0.46,0.69 )          |
| 20–39                              | -                                     | ( - )                  | 0.65                                   | ( 0.54,0.78 )          | 0.53                                 | ( 0.41,0.68 )          |
| 65–74                              | 1                                     | ( Ref. )               | -                                      | ( - )                  | -                                    | ( - )                  |
| 50–64                              | 0.88                                  | ( 0.78,0.99 )          | -                                      | ( - )                  | -                                    | ( - )                  |
| Marital status                     |                                       |                        |  |                        |                                      |                        |
| Married                            | 1                                     | ( Ref. )               | 1                                      | ( Ref. )               | 1                                    | ( Ref. )               |
| Single                             | 1.62                                  | ( 1.28,2.04 )          | 2.59                                   | ( 2.18,3.07 )          | 1.30                                 | ( 0.98,1.72 )          |
| Divorced/widowed                   | 1.53                                  | ( 1.27,1.84 )          | 1.61                                   | ( 1.33,1.96 )          | 1.53                                 | ( 1.25,1.88 )          |
| Educational qualification          |                                       |                        |  |                        |                                      |                        |
| Vocational school/junior col-      | 1                                     | ( Ref. )               | 1                                      | ( Ref. )               | 1                                    | ( Ref. )               |

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|---|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| lege/community(technical) college/university/post graduate school |                    |                    |                    |                    |                    |                    |
| High school   | 1.51 ( 1.33,1.72 ) | 1.27 ( 1.11,1.46 ) | 1.30 ( 1.15,1.48 ) | 1.20 ( 1.04,1.38 ) | 1.61 ( 1.38,1.87 ) | 1.32 ( 1.12,1.55 ) |
| Primary/junior high school  | 2.05 ( 1.68,2.50 ) | 1.50 ( 1.2,1.87 )  | 2.86 ( 2.21,3.72 ) | 1.87 ( 1.4,2.5 )   | 3.10 ( 2.36,4.07 ) | 1.80 ( 1.33,2.44 ) |
| Subjective financial state  |                    |                    |                    |                    |                    |                    |
| Wealthy   | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         |
| Not poor not wealthy  | 2.05 ( 1.55,2.70 ) | 1.76 ( 1.32,2.35 ) | 1.60 ( 1.21,2.12 ) | 1.43 ( 1.07,1.92 ) | 1.97 ( 1.41,2.75 ) | 1.82 ( 1.28,2.57 ) |
| Poor  | 2.84 ( 2.16,3.73 ) | 2.29 ( 1.72,3.06 ) | 2.26 ( 1.72,2.98 ) | 2.00 ( 1.5,2.68 )  | 2.69 ( 1.94,3.74 ) | 2.41 ( 1.7,3.4 )   |
| Health insurance  |                    |                    |                    |                    |                    |                    |
| Employee insurance  | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         |
| National Health Insurance   | 1.74 ( 1.54,1.96 ) | 1.40 ( 1.19,1.64 ) | 1.82 ( 1.59,2.09 ) | 1.36 ( 1.15,1.61 ) | 1.85 ( 1.59,2.15 ) | 1.27 ( 1.05,1.53 ) |
| Other   | 3.36 ( 2.26,4.98 ) | 2.24 ( 1.47,3.42 ) | 5.14 ( 2.83,9.34 ) | 3.02 ( 1.62,5.63 ) | 6.08 ( 3.17,11.7 ) | 3.33 ( 1.68,6.59 ) |
| Employment status   |                    |                    |                    |                    |                    |                    |
| Employed  | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         |
| Self-employed   | 1.66 ( 1.33,2.07 ) | 1.67 ( 1.3,2.16 )  | 1.30 ( 0.88,1.93 ) | 1.11 ( 0.73,1.69 ) | 1.61 ( 1.06,2.45 ) | 1.36 ( 0.86,2.13 ) |
| Employed(other)   | 1.43 ( 1.15,1.78 ) | 1.47 ( 1.16,1.86 ) | 1.23 ( 0.97,1.57 ) | 1.23 ( 0.94,1.61 ) | 1.55 ( 1.20,2.01 ) | 1.40 ( 1.05,1.86 ) |
| Unemployed  | 1.78 ( 1.55,2.03 ) | 1.57 ( 1.31,1.86 ) | 1.39 ( 1.22,1.58 ) | 1.23 ( 1.05,1.44 ) | 1.72 ( 1.48,2.00 ) | 1.39 ( 1.16,1.68 ) |
| Kessler Psychological Distress Scale                              |                    |                    |                    |                    |                    |                    |
| Normal (total score =< 4)   | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         |
| Mild illness (5 ≤ total score ≤ 12)                               | 1.19 ( 1.03,1.37 ) | 1.13 ( 0.97,1.32 ) | 0.97 ( 0.85,1.12 ) | 0.94 ( 0.81,1.1 )  | 0.92 ( 0.78,1.09 ) | 0.90 ( 0.75,1.08 ) |
| Severe illness (13 ≤ total score)                                 | 1.11 ( 0.76,1.61 ) | 0.83 ( 0.56,1.25 ) | 1.01 ( 0.75,1.36 ) | 0.86 ( 0.61,1.2 )  | 0.97 ( 0.66,1.43 ) | 0.87 ( 0.57,1.33 ) |
| Constant visit to hospital†                                       |                    |                    |                    |                    |                    |                    |
| Yes (constant visit)  | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         |
| No (no-constant visit)  | 1.38 ( 1.22,1.56 ) | 1.56 ( 1.36,1.78 ) | 1.20 ( 1.06,1.35 ) | 1.53 ( 1.33,1.77 ) | 1.27 ( 1.10,1.46 ) | 1.68 ( 1.44,1.98 ) |
| Subjective health status  |                    |                    |                    |                    |                    |                    |
| Good  | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         |
| Normal  | 1.09 ( 0.96,1.25 ) | 1.06 ( 0.92,1.23 ) | 1.20 ( 1.05,1.37 ) | 1.16 ( 1.01,1.34 ) | 1.09 ( 0.93,1.27 ) | 1.04 ( 0.88,1.23 ) |
| Bad   | 1.24 ( 1.02,1.51 ) | 1.11 ( 0.88,1.39 ) | 1.16 ( 0.94,1.42 ) | 1.13 ( 0.89,1.44 ) | 1.11 ( 0.88,1.41 ) | 1.09 ( 0.83,1.42 ) |

|  |                    |                    |                    |                    |                    |                    |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Alcohol consumption                                    |                    |                    |                    |                    |                    |                    |
| Never or quit drinking                                 | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         |
| Social drinker/low-risk group<br>(> 0 to ≤ 100 g/week) | 0.65 ( 0.56,0.75 ) | 0.77 ( 0.65,0.9 )  | 0.85 ( 0.74,0.99 ) | 0.92 ( 0.79,1.08 ) | 0.72 ( 0.61,0.86 ) | 0.81 ( 0.68,0.98 ) |
| Middle- risk drinking<br>(> 100 to ≤ 350 g/week)       | 0.70 ( 0.60,0.82 ) | 0.92 ( 0.77,1.09 ) | 0.72 ( 0.58,0.90 ) | 0.82 ( 0.65,1.04 ) | 0.92 ( 0.71,1.18 ) | 1.05 ( 0.8,1.38 )  |
| High-risk drinking (> 350 g/week)                      | 0.90 ( 0.61,1.32 ) | 1.10 ( 0.73,1.65 ) | 0.76 ( 0.43,1.35 ) | 0.81 ( 0.44,1.5 )  | 0.89 ( 0.44,1.81 ) | 1.12 ( 0.53,2.34 ) |
| Smoking habit  |                    |                    |                    |                    |                    |                    |
| Never/ex-smoker  | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         | 1 ( Ref. )         |
| Current smoker   | 1.37 ( 1.18,1.60 ) | 1.55 ( 1.31,1.84 ) | 1.37 ( 1.12,1.69 ) | 1.37 ( 1.1,1.71 )  | 1.83 ( 1.42,2.36 ) | 1.81 ( 1.39,2.36 ) |
| Model chi square test                                  | P<0.001            |                    | P<0.001            |                    | P<0.001            |                    |
| Hosmer-Lemeshow test                                   | P=0.575            |                    | P=0.919            |                    | P=0.853            |                    |

Note: OR, odds ratio; CI, confidence interval; Ref., reference

† No clear definition regarding the frequency of visit is provided in the questionnaire.

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