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Behavioural Risk Factor Survey (April 2013)

Main Report

Commissioned by

衞生署
Department of Health

Surveillance and Epidemiology Branch
Centre for Health Protection
Department of Health

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Executive Summary

Introduction

The Department of Health commissioned the Social Sciences Research Centre of the University of Hong Kong (SSRC) to conduct a survey in April 2013 to collect information on health risks and health-related behaviours (behavioural risk factors) among the adult Hong Kong population. The findings of a series of such surveys can also detect any changing trends of the risk factors. This will provide information to facilitate the planning, implementation and evaluation of health promotion programmes on the prevention of diseases related to lifestyle.

The scope of this survey covered the following 8 areas:

1. Doctor-diagnosed chronic diseases
2. Knowledge about the Food Pyramid and related eating behaviours
3. Colorectal cancer risk
4. Breast and ovarian cancer risk (for female respondents only)
5. Attitude towards organ donation
6. Constipation
7. Jaywalking
8. Demographic information: gender, age, education, marital status, occupation, monthly personal income, monthly household income, and type of living quarters.

Research Methodology

This survey was conducted through Computer Assisted Telephone Interview (CATI). A random sample of telephone numbers was drawn from a sampling frame that included unlisted and new numbers. The sampling frame was generated from the 2007 Hong Kong residential telephone directory (English version) by dropping the last digit of the telephone numbers on the directory, removing the resulting duplicates, and then adding back all 10 possible final digits. The telephone numbers on the final list were then randomized and selected as needed. The target respondents were Cantonese, Putonghua or English speaking residents in Hong Kong aged 18-64 (excluding foreign domestic helpers). A bilingual (Chinese and English) questionnaire with 47 questions was used. Fieldwork took place between 16th April and 23rd May 2013. A sample size of 2 105 successful interviews was achieved. The contact rate was 33.2% and the overall response rate was 69.1%. The width of a 95% confidence interval was at most +/- 2.1%. Weighting based on age, gender and

type of living quarters was applied in order to make the findings representative of the Hong Kong general population, using the Hong Kong population data compiled by the Census and Statistics Department for the second quarter of 2013 as reference.

Statistical tests were applied to detect any significant associations between selected demographics and the response variables. Only the findings that are statistically significant at the 5% level (2-tailed) are presented in the report.

Key Findings of the Survey

Doctor-diagnosed chronic diseases

More than one-tenth (14.4%) of the respondents claimed that they had hypercholesterolaemia, followed by hypertension (10.9%), diabetes (3.8%) and cardiovascular disease (2.9%).

Knowledge about the Food Pyramid and related eating behaviours

Most of the respondents (89.1%) reported that they had seen or heard of the Food Pyramid.

Among those who had seen or heard of the Food Pyramid, over half (52.0%) of them correctly stated that they should eat "Grains and Cereals" the most every day. And about half (50.4%) of the respondents correctly stated that they should eat "Oil, salts and sweets" the least every day. Moreover, more than two-fifths (47.0%) of the respondents correctly stated that they should eat at least 2 servings of fruit every day. Furthermore, more than a quarter (26.2%) of respondents correctly stated that they should eat at least 3 servings of vegetables every day.

On average, 36.1% of the respondents ate 3 to 6 bowls of grains per day. About half (47.8%) of the respondents consumed 1 to 2 servings of dried beans and soybean products per day. More than one-third (37.3%) of the respondents had 1 to 2 servings of milk products such as yogurts, milk or cheese per day. More than two-thirds (68.5%) of the respondents had 1 to 2 servings of milk alternatives such as calcium-fortified soy milk, bean curd (tofu), or dark green leafy vegetables per day. Nearly two-thirds of the respondents (65.0%) ate less than 4 eggs per week.

Colorectal cancer risk

2.8% of the respondents claimed that they had first-degree relatives who had colorectal cancer at or before age 60. 16.7% of the respondents reported that they had colonoscopy, flexible sigmoidoscopy or other colonic examination. Among those who reported that they had colonoscopy, flexible sigmoidoscopy or other colonic examination, nearly one-third (30.0%) of respondents reported that colonic polyps(s) was(were) found.

Breast and ovarian cancer risk (for female respondents only)

The vast majority (94.2%) of female respondents had never taken hormonal replacement therapy for menopausal symptoms or other reasons while 1.2% of them were still taking hormonal replacement therapy for menopausal symptoms or other reasons and 4.6% of them had taken the therapy but had stopped at the time of survey.

About two-thirds (66.4%) of female respondents reported that they had given birth. Among those female respondents who had given birth, 8.6% of them gave birth to their first child at the age 35 or above. More than three-fifths (61.0%) of female respondents who had children reported that they had breastfed their children.

2.7% of the female respondents claimed that they had first-degree relatives who had breast cancer at or before age 50. On the other hand, 5.6% of the female respondents claimed that they had second-degree relatives who had breast cancer.

Overall, 3.3% of the female respondents claimed that they had first-degree or second-degree female relatives who had ovarian cancer.

Attitude towards organ donation

About three-fifths of the respondents (63.4%) reported that they were willing to donate their organs after death while less than one-fifth (17.5%) of them reported that they were not willing to do so.

Among those respondents who were willing to donate their organs, 20.9% of them carried an organ donation card, less than one-tenth (9.2%) of them registered online and less than one-tenth (9.2%) of them filled in registration form and returned it to the Department of Health.

About half (51.9%) of respondents strongly agreed or agreed with the suggestion that everyone should be assumed to be willing to donate organs after death unless having clearly expressed an objection beforehand.

Only about one-third (34.6%) of respondents expressed that they were willing to donate their bodies after death for medical education and research, while about half (51.0%) of respondents expressed that they were not willing to do so.

Constipation

About one-third (33.9%) of respondents had ever had constipation during the thirty days prior to the survey, including 4.8% of respondents who reported that they had constipation all or most of the time during those thirty days.

Jaywalking

More than a quarter of pedestrians (26.4%) reported that they never jay-walked (such as crossing the road by ignoring traffic light instructions, not using zebra-crossing or footbridge when they are available). In contrast, 6.1% claimed that they did not comply with traffic instructions all or most of the time when they crossed the road.

Recommendations

Some recommendations based on the survey findings are suggested below:

1. Although most (89.1%) of the respondents had seen or heard of the Food Pyramid, only 52.0% and 50.4% of respondents correctly stated we should eat "Grains and Cereals" the most and "Oil, Salts and Sweets" the least every day respectively. And only 47.0% and 26.2% of respondents correctly stated that we should consume at least 2 servings of fruit and at least 3 servings of vegetables per day respectively. Future educational campaign can be organized to educate the general public about the Food Pyramid.

2. The Hong Kong SAR Government's Cancer Expert Working Group on Cancer Prevention and Screening (CEWG) recommends individuals aged 50 to 75 should discuss with their doctor and consider screening for colorectal cancer. The CEWG also recommends high-risk groups, (e.g. with hereditary bowel disease or with one or more first-degree relatives having colorectal cancer diagnosed at or below 60 years of age etc.) to start colorectal cancer screening at an earlier age and repeated at shorter time intervals. Only 28.0% of respondents aged 50 to 64 reported that they had colonoscopy, flexible sigmoidoscopy or other colonic examination. And 39.6% of respondents with first-degree relatives with colorectal cancer reported that they had colonoscopy, flexible sigmoidoscopy or other colonic examination. Promotion is needed to encourage those who are aged 50-75 or have a family history of colorectal cancer to seek advice from doctors for assessment of the need of a screening test and to obtain full information on its potential benefits and risks for an informed choice.

3. Only 34.6% of respondents stated that they were willing to donate their bodies after death for medical education and research while 51.0% of them were unwilling to do so. This shows that the general public is still unable to accept the donation of whole body after death. If the Department of Health wishes to promote body donation in addition to organ donation, there should be more promotion of body donation programmes.

4. About 73.6% of the respondents reported that they had crossed the road by ignoring traffic light instructions and not using zebra-crossing or footbridge "all" or "most" or "some" of the time. Publicity and education should be implemented to promote pedestrian safety.

Chapter 1 Introduction

The Department of Health commissioned the Social Sciences Research Centre of the University of Hong Kong (SSRC) to conduct a survey in April 2013 to collect information on health risks and health-related behaviours (behavioural risk factors) among the adult Hong Kong population. The findings of a series of such surveys can detect any changing trends of the risk factors. This will provide information to facilitate the planning, implementation and evaluation of health promotion programmes on the prevention of diseases related to lifestyle.

The scope of this survey encompasses the following areas:

- Doctor-diagnosed chronic diseases
- Knowledge about the Food Pyramid and related eating behaviours
- Colorectal cancer risk
- Breast and ovarian cancer risk (for female respondents only)
- Attitude towards organ donation
- Constipation
- Jaywalking
- Demographic information: gender, age, educational attainment, marital status, occupation, monthly personal income, monthly household income, and type of living quarters.

Chapter 2 Research Methodology

2.1 Mode of survey and sampling method

The survey was conducted through Computer Assisted Telephone Interview (CATI). A random sample of telephone numbers was drawn from a sampling frame generated from the 2007 Hong Kong residential telephone directory (English version) [1] by dropping the last digit of the telephone numbers on the directory, removing the resulting duplicates, and then adding back all 10 possible final digits. The telephone numbers on the final list were then randomized and selected as needed. This method provides an equal probability sample that covers unlisted and new numbers but excludes large businesses that used blocks of at least 10 numbers[2].

For each successfully contacted residential unit, when more than one eligible person resided in the household and more than one was present at the time of the telephone contact, the "Next Birthday" rule was applied i.e., the household member who had his/her birthday the soonest was selected.

2.2 Target respondents

Eligible respondents were residents in all districts of Hong Kong aged between 18 and 64 who spoke Cantonese, Putonghua or English. Foreign domestic helpers were excluded.

2.3 Questionnaire design

A bilingual (Chinese and English) questionnaire with 35 pre-coded questions and 12 open-ended questions (with 8 demographic questions) was used to cover all the areas outlined in Chapter 1.

A copy of the questionnaire is enclosed in Annex A.

2.4 Pilot study

A pilot study comprising 50 successfully completed interviews was conducted on 21st, 22nd and 25th March 2013 to test the length, logic, wording and format of the questionnaire. The data collected from these pilot interviews were not included in this survey report.

2.5 Fieldwork

Fieldwork took place in the call-centre of SSRC on all the weekdays and Saturdays between 16th April and 23rd May 2013, except 1st May and 17th May, which are public holidays (a total of 26 weekdays and 2 Saturdays).

Because of the briefing on 16th April, 2013, telephone calls were made between 5:30 p.m. and

[1] The Chinese residential telephone directory was not used because the total number of telephone numbers is smaller than that in the English residential telephone directory.
[2] This selection process includes unlisted numbers, new numbers, some business and fax numbers so that the contact rate is lower than a pure directory sample.

10:30 p.m. on that day. On the weekdays, telephone calls were made between 4:00 p.m. and 10:30 p.m. On the Saturdays, telephone calls were made between 2:00 p.m. and 6:00 p.m.

2.6 Response rate

A total of 30 692 telephone numbers were attempted. The number of successful interviews was 2 105. Refusal and dropout cases amounted to 940. All "not available" (4 254), and "no answer" (5 940) cases were attempted five times before being classified as non-contact cases. The contact rate was 33.2%[3] and the overall response rate was 69.1%[4]. Table 2.6 details the breakdown of telephone contact status.

Table 2.6: Final status of telephone numbers attempted

Type	Final status of contacts[5]	Number of cases
1	Success	2 105
2	Drop-out	107
3	Refusal	833
4	Language problems	89
5	Not eligible	1 139
6	Business lines	1 662
7	Not available	4 254
8	Busy tone	513
9	No answer	5 940
10	Fax/data lines	1 447
11	Invalid	12 603
TOTAL		**30 692**

[3]Contact rate = the number of answered telephone calls divided by the total number of calls attempted, i.e. from Table 2.6, Sum of (types 1 to 7) / Total = (2 105 + 107 +833 + 89 + 1 139 + 1 662 + 4 254) / 30 692 = 33.2%.

[4] Response rate = the number of successful interviews divided by the sum of the numbers of successful interviews, drop-out cases and refusal cases, i.e. from Table 2.6, (type 1) / (type 1 + type 2 + type 3) = 2 105 / (2 105 + 107 +833) = 69.1%.

[5] "Drop-out": eligible respondents who initially accepted the interview but failed to complete the interview due to some reasons. "Refusal": eligible respondents who refused the interview. "Language problems": eligible respondents who were not able to speak clearly in any of the three languages. "Not available": eligible respondents who were busy at the time of telephone contact. "Invalid": not a valid telephone line (because we used a random method to generate telephone numbers, see section 2.1).

2.7 Sample size and sampling error

A sample size of 2 105 successful interviews was achieved (the target sample size was 2 000). The width of a 95% confidence interval for this sample size is at most +/− 2.1%[6]. This means that we can have 95% confidence that the true population proportion falls within the sample proportion plus or minus 2.1%. For example, 63.4% of the respondents reported that they were willing to donate their organs after death, and then the *conservative* 95% confidence interval for the true percentage of the population that were willing to donate their organs after death falls between 63.4% ± 2.1%, i.e. 61.3% and 65.5%.

2.8 Quality control

All SSRC interviewers were well trained in a standardized approach prior to the commencement of the survey. All interviews were conducted by experienced interviewers fluent in Cantonese, Putonghua and English.

The SSRC engaged in quality checks for each stage of the survey to ensure satisfactory standard of performance. At least 15% of the questionnaires completed by each interviewer were checked by the SSRC independently.

2.9 Statistical analysis and weighting

This survey revealed some differences in the proportions of gender, age and type of living quarters when compared with the Hong Kong population data compiled by the Census and Statistics Department (C&SD) for the second quarter of 2013. The proportions of respondents among age groups 18-24, 50-64 were much higher than the population while the proportions of respondents aged 25-39 years old were much lower. Table 2.9a (i) and table 2.9a (ii) show the differences in terms of age, gender and type of living quarters.

In view of the demographic differences between this sample and the population, weighting was applied by gender, age and type of living quarters in order to make the results more representative of the general population. The weights are the ratio of the age, gender and type of living quarters distribution of the population to that of this sample (Table 2.9b).

[6] As the population proportion is unknown, 0.5 is put into the formula of the sampling error to produce the most conservative estimate of the sampling error. The confidence interval width is:

$$\pm 1.96 \times \sqrt{\frac{0.5 \times 0.5}{2105}} \times 100\% = 2.1\%$$

Table 2.9a (i): Data of age, gender and type of living quarters of this survey

Gender/ Age group		This survey			
		Public rental flats	**Subsidized sale flats**	**Private housing**	**Total**
		% of Total	*% of Total*	*% of Total*	*% of Total*
Male	18-24	**2.90%**	**0.58%**	**2.65%**	6.13%
	25-29	**1.11%**	**0.29%**	**0.97%**	2.36%
	30-34	**0.48%**	**0.34%**	**0.87%**	1.69%
	35-39	**0.39%**	**0.43%**	**1.50%**	2.32%
	40-44	**0.82%**	**0.34%**	**2.85%**	4.01%
	45-49	**0.97%**	**0.58%**	**2.27%**	3.81%
	50-54	**1.59%**	**0.72%**	**2.94%**	5.26%
	55-59	**0.82%**	**0.72%**	**2.70%**	4.25%
	60-64	**1.59%**	**0.82%**	**2.27%**	4.68%
	Total	**10.67%**	**4.83%**	**19.02%**	34.51%
Female	18-24	**2.65%**	**1.25%**	**3.04%**	6.95%
	25-29	**1.35%**	**0.19%**	**1.50%**	3.04%
	30-34	**1.16%**	**0.34%**	**2.17%**	3.67%
	35-39	**1.64%**	**0.72%**	**3.47%**	5.84%
	40-44	**2.56%**	**1.01%**	**4.63%**	8.20%
	45-49	**2.17%**	**0.77%**	**4.68%**	7.63%
	50-54	**4.10%**	**2.22%**	**5.89%**	12.21%
	55-59	**2.99%**	**1.35%**	**3.96%**	8.30%
	60-64	**3.09%**	**1.88%**	**4.68%**	9.65%
	Total	**21.72%**	**9.75%**	**34.03%**	65.49%
Total	18-24	**5.55%**	**1.83%**	**5.69%**	13.08%
	25-29	**2.46%**	**0.48%**	**2.46%**	5.41%
	30-34	**1.64%**	**0.68%**	**3.04%**	5.36%
	35-39	**2.03%**	**1.16%**	**4.97%**	8.16%
	40-44	**3.38%**	**1.35%**	**7.48%**	12.21%
	45-49	**3.14%**	**1.35%**	**6.95%**	11.44%
	50-54	**5.69%**	**2.94%**	**8.83%**	17.47%
	55-59	**3.81%**	**2.08%**	**6.66%**	12.55%
	60-64	**4.68%**	**2.70%**	**6.95%**	14.33%
	Total	**32.38%**	**14.58%**	**53.04%**	100.00%

Table 2.9a (ii): Age, gender and type of housing from the Hong Kong population data (excluding foreign domestic helpers) compiled by the C&SD for the second quarter of 2013

Gender/ Age group		Hong Kong population data- from the C&SD (2nd quarter of 2013)			
		Public rental housing	**Subsidized home ownership housing**	**Private housing**	***Total***
		% of Total	*% of Total*	*% of Total*	*% of Total*
Male	18 - 24	**2.32%**	**1.07%**	**2.97%**	6.36%
	25 - 29	**1.42%**	**0.96%**	**2.18%**	4.57%
	30 - 34	**1.37%**	**0.81%**	**2.61%**	4.79%
	35 - 39	**1.07%**	**0.60%**	**3.08%**	4.75%
	40 - 44	**1.21%**	**0.74%**	**3.01%**	4.96%
	45 - 49	**1.49%**	**0.94%**	**3.22%**	5.64%
	50 - 54	**1.80%**	**1.29%**	**3.42%**	6.50%
	55 - 59	**1.79%**	**1.20%**	**2.80%**	5.79%
	60 - 64	**1.44%**	**0.90%**	**2.18%**	4.53%
	Total	**13.92%**	**8.49%**	**25.48%**	47.89%
Female	18 - 24	**2.26%**	**1.06%**	**2.69%**	6.00%
	25 - 29	**1.42%**	**0.97%**	**2.50%**	4.89%
	30 - 34	**1.44%**	**0.89%**	**3.16%**	5.49%
	35 - 39	**1.30%**	**0.73%**	**3.66%**	5.68%
	40 - 44	**1.83%**	**0.85%**	**3.51%**	6.18%
	45 - 49	**2.02%**	**1.13%**	**3.47%**	6.62%
	50 - 54	**1.95%**	**1.45%**	**3.41%**	6.81%
	55 - 59	**1.83%**	**1.28%**	**2.76%**	5.87%
	60 - 64	**1.57%**	**0.90%**	**2.11%**	4.58%
	Total	**15.61%**	**9.24%**	**27.27%**	52.11%
Overall	18 - 24	**4.58%**	**2.12%**	**5.66%**	12.36%
	25 - 29	**2.84%**	**1.93%**	**4.69%**	9.46%
	30 - 34	**2.81%**	**1.70%**	**5.77%**	10.28%
	35 - 39	**2.37%**	**1.32%**	**6.74%**	10.43%
	40 - 44	**3.04%**	**1.58%**	**6.52%**	11.14%
	45 - 49	**3.51%**	**2.06%**	**6.69%**	12.26%
	50 - 54	**3.75%**	**2.74%**	**6.83%**	13.31%
	55 - 59	**3.62%**	**2.48%**	**5.56%**	11.66%
	60 - 64	**3.01%**	**1.80%**	**4.29%**	9.10%
	Total	**29.53%**	**17.73%**	**52.75%**	100.00%

Table 2.9b: Weights by age, gender and type of living quarters applied in the analyses

Gender/ Age group		Type of living quarters		
		Public rental flats	**Subsidized sale flats**	**Private housing**
Male	18 - 24	0.801136104	1.843543761	1.119989446
	25 - 29	1.283087781	3.314799074	2.261652327
	30 - 34	2.848006634	2.399419509	2.999785771
	35 - 39	2.759946097	1.374603504	2.060519567
	40 - 44	1.478204135	2.184637711	1.056435214
	45 - 49	1.546428942	1.614443177	1.418473828
	50 - 54	1.129882425	1.778393283	1.161230111
	55 - 59	2.180666955	1.652387962	1.036322173
	60 - 64	0.905988673	1.096650589	0.962405246
	Missing	1.000000000	1.000000000	1.000000000
Female	18 - 24	0.849754893	0.840953345	0.885037375
	25 - 29	1.047828340	5.004415881	1.673912331
	30 - 34	1.240364880	2.626474552	1.454788708
	35 - 39	0.794692651	1.002315055	1.052430808
	40 - 44	0.714048164	0.834580699	0.757105836
	45 - 49	0.930721122	1.460516223	0.740886489
	50 - 54	0.475552168	0.652749897	0.578854549
	55 - 59	0.611088856	0.948108220	0.698302771
	60 - 64	0.508093190	0.475824290	0.450820350
	Missing	1.000000000	1.000000000	1.000000000

Statistical tests were applied to detect any significant differences between sub-groups. Associations between selected demographic information and responses of selected questions were also examined. Significance testing was conducted at the 5% level (2-tailed). The statistical software, IBM SPSS for Windows version 20.0 was used to perform all statistical analyses.

Chapter 3 Findings of the survey

This chapter presents the findings of this survey after weighting for gender, age and type of living quarters. Some percentages in the figures may not add up to the total or 100% because of rounding.

3.1 Demographics

This section briefly describes the characteristics of respondents in this survey (Table 3.1).

3.1.1 Gender and age

As gender and age were applied to compile weightings in this survey, the distribution of gender and age reported in this report matches the Hong Kong Population aged 18-64 (excluding foreign domestic helpers) compiled by the C&SD for the second quarter of 2013.

Overall, 52.4% of the respondents were females and 43.9% were aged between 30 and 49.

3.1.2 Marital status

Over three-fifths (63.8%) of the respondents were married – 57.4% had children and 6.3% did not have a child. Nearly one-third (31.8%) of the respondents were never married, 3.3% were divorced or separated and 1.1% were widowed.

3.1.3 Educational attainment

Most of the respondents (73.5%) had upper secondary education or above – 31.5% had upper secondary (F.4-F.6)/matriculation and 42.0% attained tertiary education or above. The remaining of the respondents (26.5%) had lower secondary (F.1-F.3) or primary education or below.

3.1.4 Occupation

More than one-third (41.9%) of the respondents were not working. This included 9.2% students; 18.7% homemakers; 5.8% unemployed persons, 8.0% retired persons and 0.2% others for no occupation.

For working respondents, a relatively higher proportion of respondents were clerks (14.8%), followed by employers/ managers/ administrators (8.5%), professionals (7.3%) and associate professionals (7.1%).

3.1.5 Income

Over half (57.2%) of the respondents had a monthly personal income below $20,000 – 39.5% had a monthly personal income of $10,000-$19,999 and 17.7% had a monthly personal income below $10,000.

Regarding the monthly household income, over half (53.9%) of the respondents had a monthly household income below $30,000 – 21.9% had a monthly household income of $20,000-$29,999, 22.3% had a monthly household income of $10,000-$19,999 and 9.8% had a monthly household income below $10,000.

3.1.6 Type of living quarters

As type of living quarters was applied as one of the weighting factors in this survey, the distribution of type of living quarters reported in this report matches the Hong Kong Population aged 18-64 (excluding foreign domestic helpers) compiled by the C&SD for the second quarter of 2013.

Nearly half (52.7%) of the respondents were living in private housing, followed by public rental flats (29.6%) and Housing Authority/ Housing Society subsidized sale flats (17.7%).

Table 3.1: Demographic information (Q1, Q25-Q31)

Gender	**Base = 2 105**
Male	47.6%
Female	52.4%
Marital Status	**Base = 2 095**
Never married	31.8%
Married and with child(ren)	57.4%
Married and without child	6.3%
Divorced/ Separated	3.3%
Widowed	1.1%
Educational Attainment	**Base = 2 102**
Primary or below	10.1%
Lower secondary (F.1-F.3)	16.5%
Upper secondary (F.4-F.6)/Matriculation	31.5%
Tertiary (Non-degree, degree or above)	42.0%

Age	**Base = 2 091**
18-24	12.3%
25-29	9.4%
30-34	10.2%
35-39	10.4%
40-44	11.1%
45-49	12.2%
50-54	13.4%
55-59	11.8%
60-64	9.1%
Occupation	**Base = 2 024**
Employer/ Manager/ Administrator	8.5%
Professional	7.3%
Associate professional	7.1%
Clerk	14.8%
Service worker	5.4%
Shop sales worker	2.0%

Table 3.1: Demographic information (Q1, Q25-Q31)[7] (Continued)

Type of Living Quarters	**Base = 2 084**
Public rental flats	29.6%
Housing Authority subsidized sale flats	16.9%
Housing Society subsidized sale flats	0.8%
Private residential flats	46.2%
Villas/ Bungalows/ Modern village houses	3.7%
Simple stone structures/ Traditional village houses	1.6%
Staff quarters	1.1%

Monthly Personal Income	**Base = 1 180[8]**
Below $10,000	17.7%
$10,000-$19,999	39.5%
$20,000-$29,999	18.9%
$30,000-$49,999	14.0%
$50,000 or above	9.9%

Craft and related worker	4.5%
Plant and machine operator and assembler	3.3%
Unskilled worker	5.3%
Student	9.2%
Homemaker	18.7%
Unemployed person	5.8%
Retired person	8.0%
Others for no occupation	0.2%

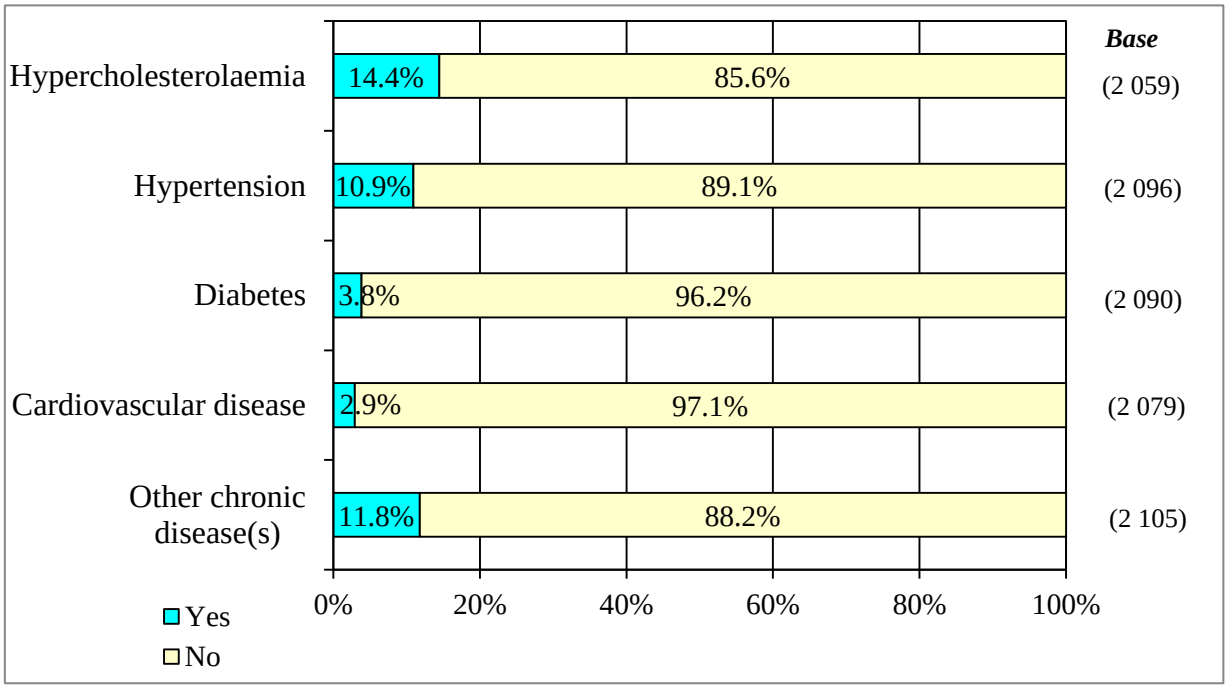
Monthly Household Income	**Base = 1 732**
Below $10,000	9.8%
$10,000-$19,999	22.3%
$20,000-$29,999	21.9%
$30,000-$49,999	23.6%
$50,000 or above	22.5%

[7] Refers to the question number in the survey questionnaire, see Annex A.
[8] For non-working respondents, they did not need to answer question Q29 (monthly personal income).

3.2 Doctor-diagnosed chronic diseases

When respondents were asked whether they had any doctor-diagnosed chronic diseases, more than one-tenth (14.4%) of the respondents claimed that they had hypercholesterolaemia, followed by hypertension (10.9%), diabetes (3.8%) and cardiovascular disease (2.9%) (Fig.3.2).

Fig. 3.2: Whether having doctor-diagnosed chronic diseases (Q2)



Base: All respondents excluding 'don't know/not sure'

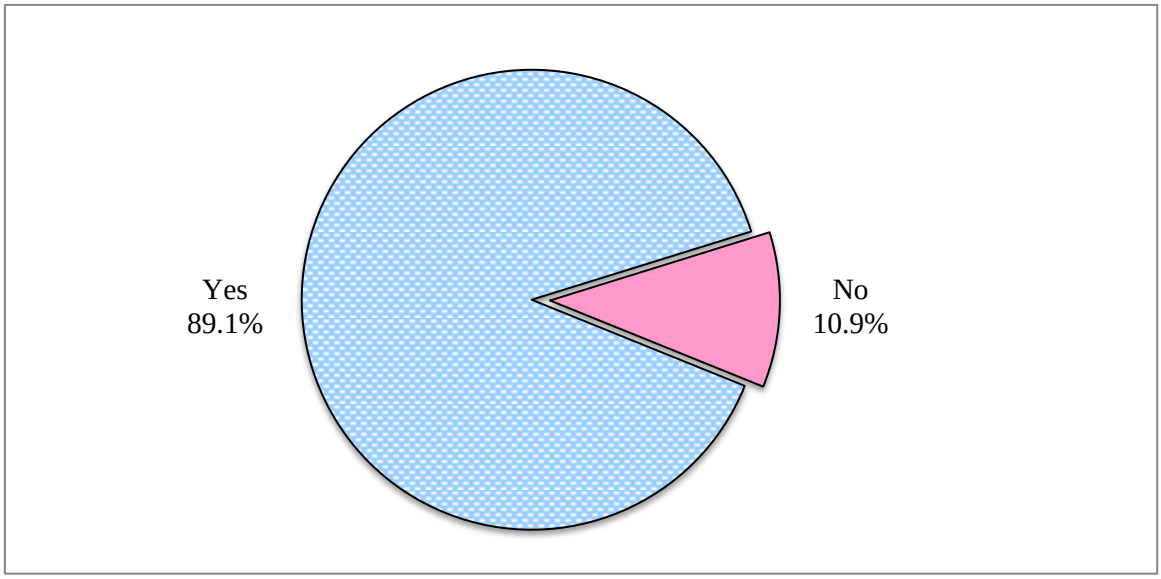
3.3 Knowledge about the Food Pyramid and related eating behaviours

Eleven questions were asked to assess the respondents' knowledge about the Food Pyramid and related eating behaviours.

3.3.1 Whether respondents had seen or heard of the Food Pyramid

Most of them (89.1%) reported that they had seen or heard of the Food Pyramid (Fig. 3.3.1).

Fig. 3.3.1: Whether respondents had seen or heard of the Food Pyramid (Q3)

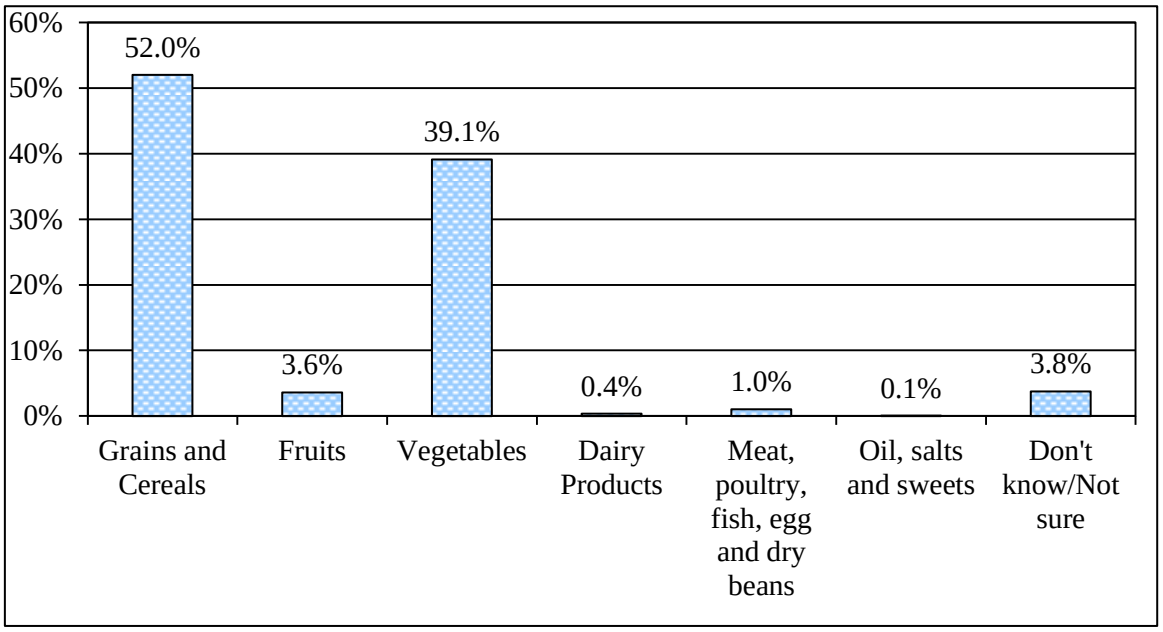


Base: All respondents excluding 'not sure' = 2 102

3.3.2 Which food group that we should eat the most every day based on the recommendation of the Food Pyramid for adults

The Food Pyramid for adults recommends that we should eat "Grains and Cereals" the most every day. Among those who had seen or heard of the Food Pyramid, over half (52.0%) of them could correctly state that they should eat "Grains and Cereals" the most every day (Fig. 3.3.2).

Fig. 3.3.2: Which food group that we should eat the most every day based on the recommendation of the Food Pyramid for adults (Q4a)

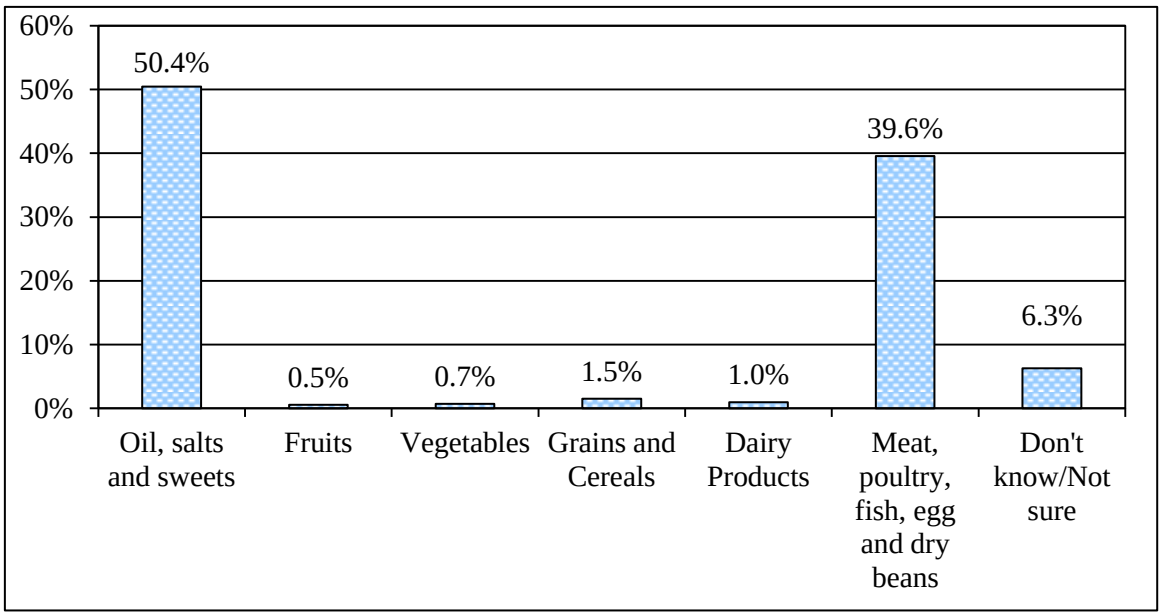


Base: All respondents who had seen or heard of the Food Pyramid = 1 873

3.3.3 Which food group that we should eat the least every day based on the recommendation of the Food Pyramid for adults

The Food Pyramid for adults recommends that we should eat "Oil, salts and sweets" the least every day. Among those who had seen or heard of the Food Pyramid, about half (50.4%) of respondents could correctly state that they should eat "Oil, salts and sweets" the least every day (Fig. 3.3.3).

Fig. 3.3.3: Which food group that we should eat the least every day based on the recommendation of the Food Pyramid for adults (Q4b)

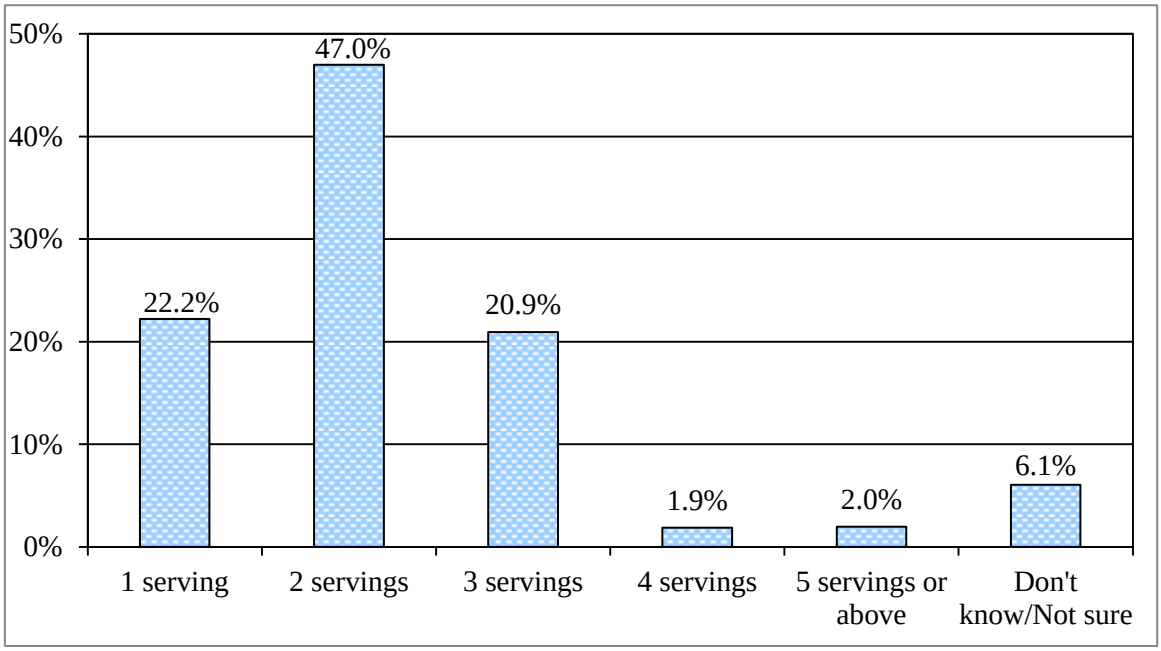


Base: All respondents who had seen or heard of the Food Pyramid = 1 873

3.3.4 Number of servings of fruit[9] that at least we should eat every day based on the recommendation of the Food Pyramid for adults

The Food Pyramid for adults recommends that we should eat at least 2 servings of fruit every day. Among those who had seen or heard of the Food Pyramid, more than two-fifths (47.0%) of respondents could correctly state that they should eat at least 2 servings of fruit every day (Fig. 3.3.4).

Fig. 3.3.4: Number of servings of fruit that at least we should eat every day based on the recommendation of the Food Pyramid for adults (Q4c)



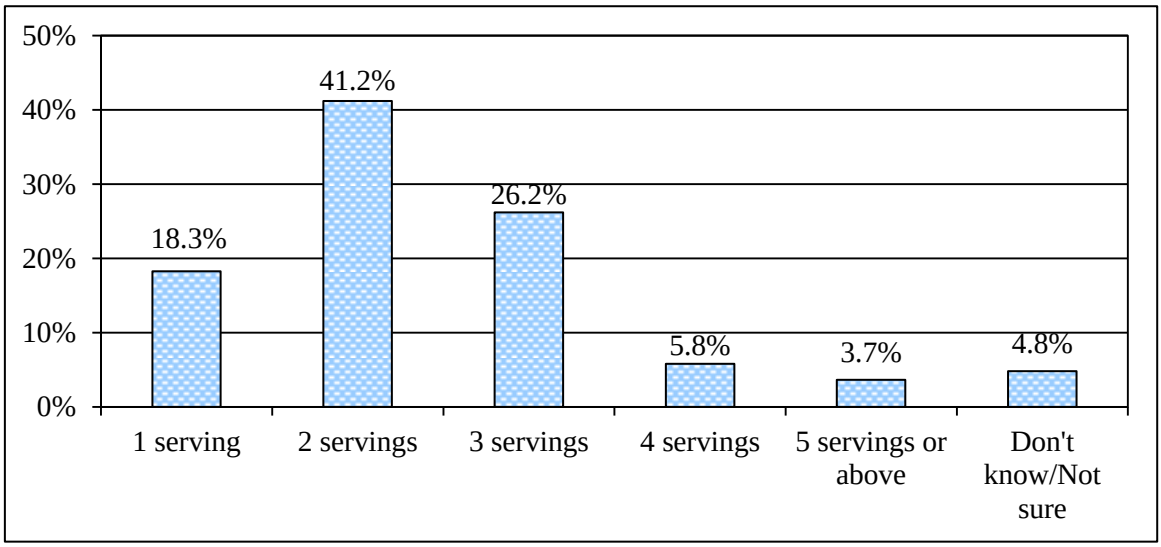
Base: All respondents who had seen or heard of the Food Pyramid = 1 873

[9] One serving of fruit is roughly equal to: 1 medium-sized apple or orange, or half piece of banana, or 2 kiwi fruits or plums, or half cup of grapes or cut fruits. Volume of one cup = 240ml.

3.3.5 Number of servings of vegetables[10] that at least we should eat every day based on the recommendation of the Food Pyramid for adults

The Food Pyramid for adults recommends that we should eat at least 3 servings of vegetables every day. Among those who had seen or heard of the Food Pyramid, more than a quarter (26.2%) of respondents could correctly state that they should eat at least 3 servings of vegetables every day (Fig. 3.3.5).

Fig. 3.3.5: Number of servings of vegetables that at least we should eat every day based on the recommendation of the Food Pyramid for adults (Q4d)



Base: All respondents who had seen or heard of the Food Pyramid = 1 873

[10] One serving of vegetables is roughly equal to: half bowl of cooked vegetables, gourds or mushrooms, or 1 bowl of raw leafy vegetables. One bowl refers to a medium-sized rice bowl.

3.3.6 Number of bowls of grains[11] consumed per day

On average, about two-thirds (63.7%) of the respondents consumed less than 3 bowls of grains per day. The mean and median numbers of bowls were 2.3 and 2.0 respectively (Table 3.3.6).

Table 3.3.6: Number of bowls of grains consumed per day (Percentage, mean and median) (Q5)

No. of bowls of grains	No. of respondents	
	Number	% of Total
Less than 3	1 335	63.7%
3-6	758	36.1%
More than 6	5	0.2%
Total	***2 098****	***100.0%***
	No. of bowls of grains eaten per day	
Mean	2.3 bowls	
Median	2.0 bowls	

**All respondents excluding 'don't eat grains', 'don't know/not sure', 'refuse to answer' and outliers*

3.3.7 Number of servings of dried beans and soybean products[12] consumed per day

About half (47.8%) of the respondents consumed 1 to 2 servings of dried beans and soybean products on average per day. The mean and median numbers of servings of dried beans and soybean products consumed were 1.1 and 1.0 respectively. (Table 3.3.7)

Table 3.3.7: Number of servings of dried beans and soybean products consumed per day (Percentage, mean and median) (Q7)

No. of servings of dried beans and soybean products	No. of respondents	
	Number	% of Total
Less than 1	842	44.2%
1-2	910	47.8%
More than 2	153	8.1%
Total	***1 905****	***100.0%***
	No. of servings of dried beans and soybean products eaten per day	
Mean	1.1 servings	
Median	1.0 serving	

**All respondents excluding 'don't eat dried beans or soybean products', 'don't know/not sure' and 'refuse to answer'*

[11] One bowl of grains is roughly equal to: one bowl of rice or rice-noodles, or 1¼ bowls of noodles, or 1½ bowls of pasta or macaroni, or 2½ bowls of congee, 10 tablespoons of uncooked oatmeal, or 2 slices of large bread. One bowl refers to a medium-sized rice bowl.

[12] One serving of dried beans and soybean products is roughly equal to ¼ piece of bean curd (tofu) , or 4 tablespoons of cooked soybeans, or 6-8 tablespoons of cooked pulses, or 1 piece (15g) bean curd sheet.

3.3.8 Number of servings of milk products[13] consumed per day

More than one-third (37.3%) of the respondents had 1 to 2 servings of milk products such as yogurts, milk or cheese on average per day. The mean and median numbers of serving were 0.6 and 0.5 respectively (Table 3.3.8)

Table 3.3.8: Number of servings of milk products consumed per day (Percentage, mean and median) (Q8)

No. of servings of milk products	No. of respondents	
	Number	**% of Total**
Less than 1	1 024	61.6%
1-2	621	37.3%
More than 2	17	1.0%
Total	***1 662****	***100.0%***
	No. of servings of milk products consumed per day	
Mean	0.6 serving	
Median	0.5 serving	

**All respondents excluding 'don't eat or drink milk products', 'don't know/ not sure', 'refuse to answer' and outliers*

3.3.9 Number of servings of milk alternatives[14] consumed per day

More than two-thirds (68.5%) of the respondents had 1 to 2 servings of milk alternatives such as calcium-fortified soy milk, bean curd (tofu), or dark green leafy vegetables on average per day. The mean and median numbers of servings were 1.2 and 1.0 respectively (Table 3.3.9).

Table 3.3.9: Number of servings of milk alternatives consumed per day (Percentage, mean and median) (Q9)

No. of servings of milk alternatives	No. of respondents	
	Number	**% of Total**
Less than 1	532	26.2%
1-2	1 394	68.5%
More than 2	109	5.4%
Total	***2 035****	***100.0%***
	No. of servings of milk alternatives consumed per day	
Mean	1.2 servings	
Median	1.0 serving	

**All respondents excluding 'don't eat or drink milk alternatives', 'don't know/ not sure', 'refuse to answer' and outliers*

[13] One serving is roughly equal to: 1 cup of milk, or 150ml of yogurt, or two slices of pre-cut cheese.
[14] One serving is roughly equal to: 1 cup of calcium-fortified soy milk, or half piece of bean curd (tofu), or 1 ½ bowls of cooked Chinese kale, small Chinese white cabbage (bok choy), Chinese amaranth, spinach or Chinese flowering cabbage.

3.3.10 Number of eggs consumed per week

Nearly two-thirds of the respondents (65.0%) ate less than 4 eggs on average per week, such as chicken or duck egg. The mean and median numbers of eggs were 3.4 and 3.0 respectively (Table 3.3.10).

Table 3.3.10: Number of eggs consumed per week (Percentage, mean and median) (Q10)

No. of eggs	**No. of respondents**	
	Number	**% of Total**
Less than 4	1 328	65.0%
4-7	610	29.9%
More than 7	104	5.1%
Total	***2 042****	***100.0%***
	No. of eggs eaten per week	
Mean	3.4 eggs	
Median	3.0 eggs	

**All respondents excluding 'don't eat eggs', 'don't know/ not sure', 'refuse to answer' and outliers*

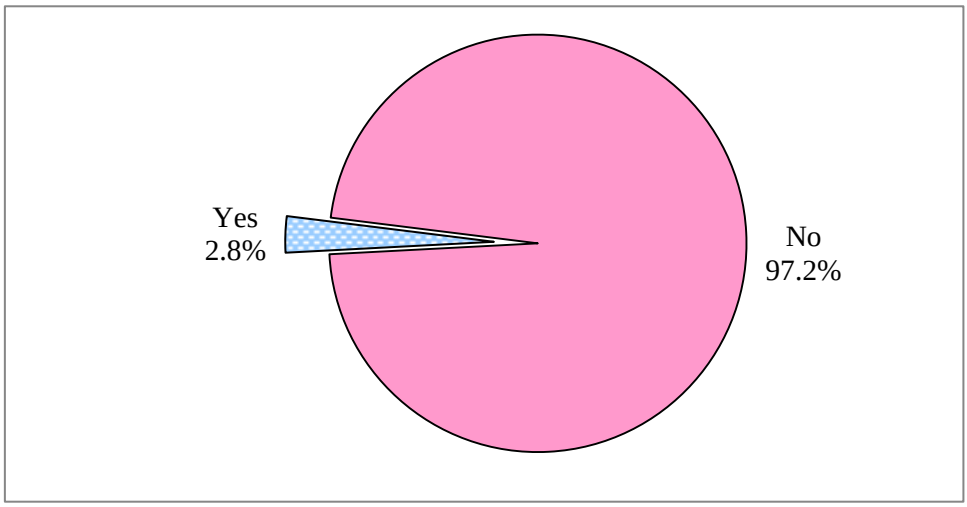
3.4 Colorectal cancer risk

Three questions were asked to investigate the colorectal cancer risk among the respondents.

3.4.1 Whether had first-degree relatives[15] who had colorectal cancer at or before age 60

Overall, 2.8% of the respondents claimed that they had first-degree relatives who had colorectal cancer at or before age 60 (Fig. 3.4.1).

Fig. 3.4.1: Whether had first-degree relatives who had colorectal cancer at or before age 60 (Q11)



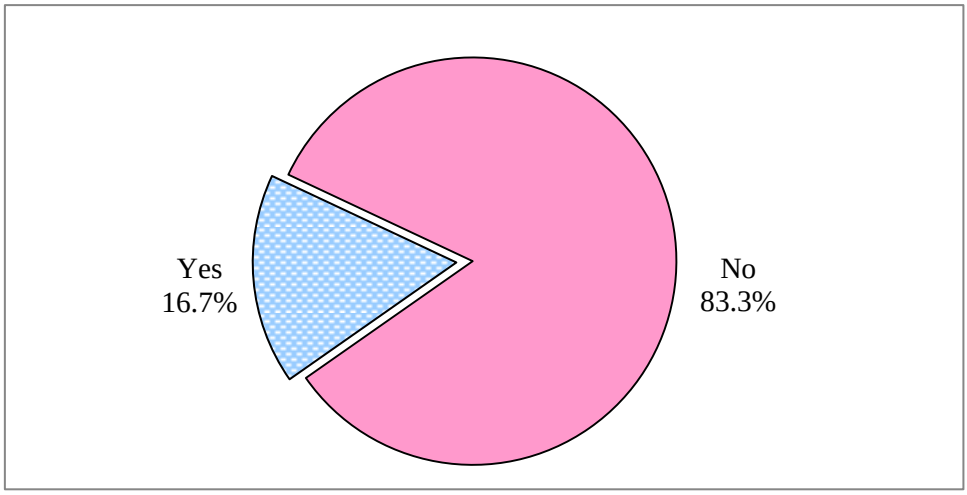
Base: All respondents excluding 'don't know/not sure' and 'refuse to answer'=2 098

3.4.2a Whether had colonoscopy, flexible sigmoidoscopy or other colonic examination

16.7% of the respondents reported that they had colonoscopy, flexible sigmoidoscopy or other colonic examination (Fig. 3.4.2a).

[15] Respondents were told that first-degree relatives meant father/ mother/ brothers/ sisters/ daughters/ sons.

Fig. 3.4.2a: Whether had colonoscopy, flexible sigmoidoscopy or other colonic examination (Q12a)

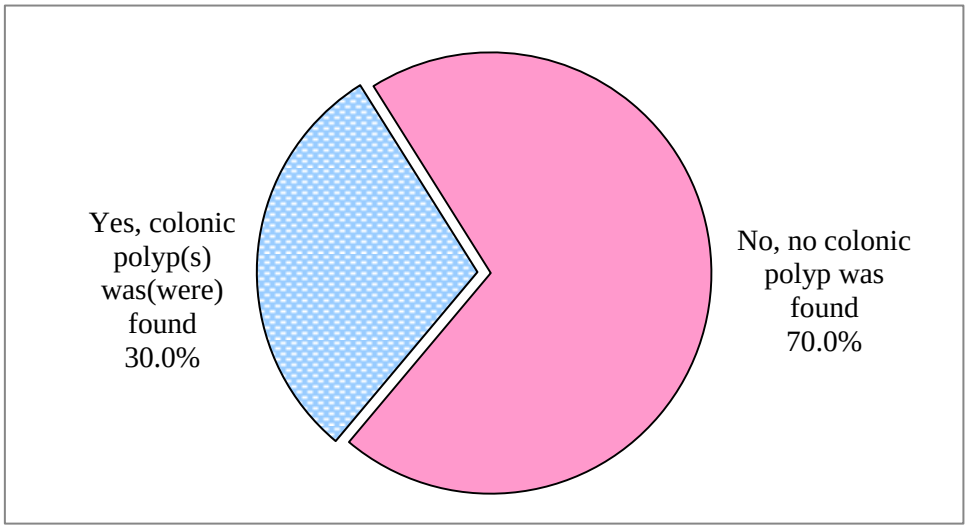


Base: All respondents excluding 'don't know/not sure' =2 100

3.4.2b Whether there was/were colonic polyp(s) found at the time of examination

Among those who had colonoscopy, flexible sigmoidoscopy or other colonic examination, nearly one-third (30.0%) of respondents reported that colonic polyps(s) was(were) found (Fig. 3.4.2b).

Fig. 3.4.2b: Whether there was/were colonic polyp(s) found at the time of examination (Q12b)



Base: All respondents who reported that they had colonoscopy, flexible sigmoidoscopy or other colonic examination excluding 'don't know/not sure' =342

3.5 Breast and ovarian cancer risk (for female respondents only)

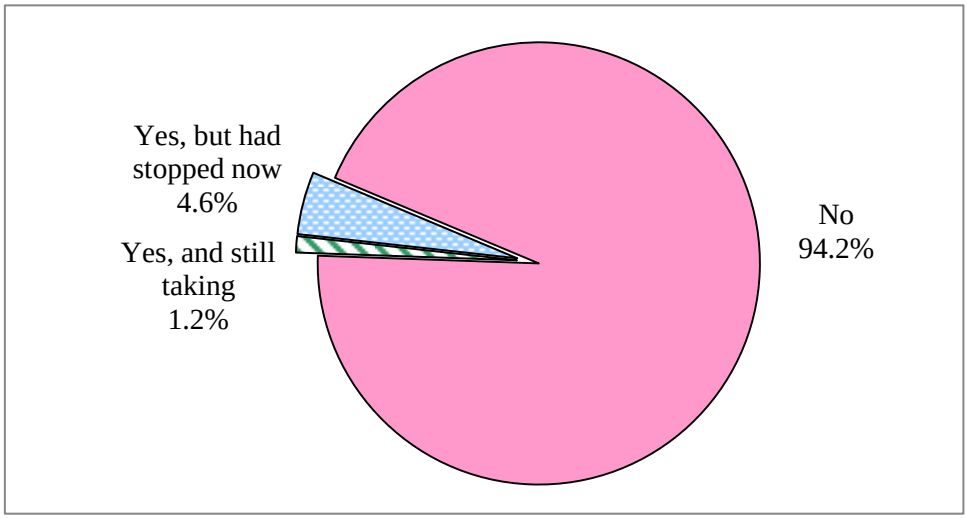
Ten questions were asked to understand the breast and ovarian cancer risk among female respondents.

3.5.1 Ever taken hormonal replacement therapy for menopausal symptoms or other reasons

Taking hormonal replacement therapy for menopausal symptoms may increase the risk of breast cancer[16]. Therefore, female respondents were asked whether they had ever taken hormonal replacement therapy for menopausal symptoms or other reasons.

Overall, the vast majority (94.2%) of respondents had never taken hormonal replacement therapy for menopausal symptoms or other reasons. While 1.2% of female respondents were still taking hormonal replacement therapy, a small proportion (4.6%) of them had taken the therapy but stopped at the time of survey (Fig. 3.5.1).

Fig. 3.5.1: Ever taken hormonal replacement therapy for menopausal symptoms or other reasons (Q13)



Base: All female respondents excluding 'not sure'=1 100

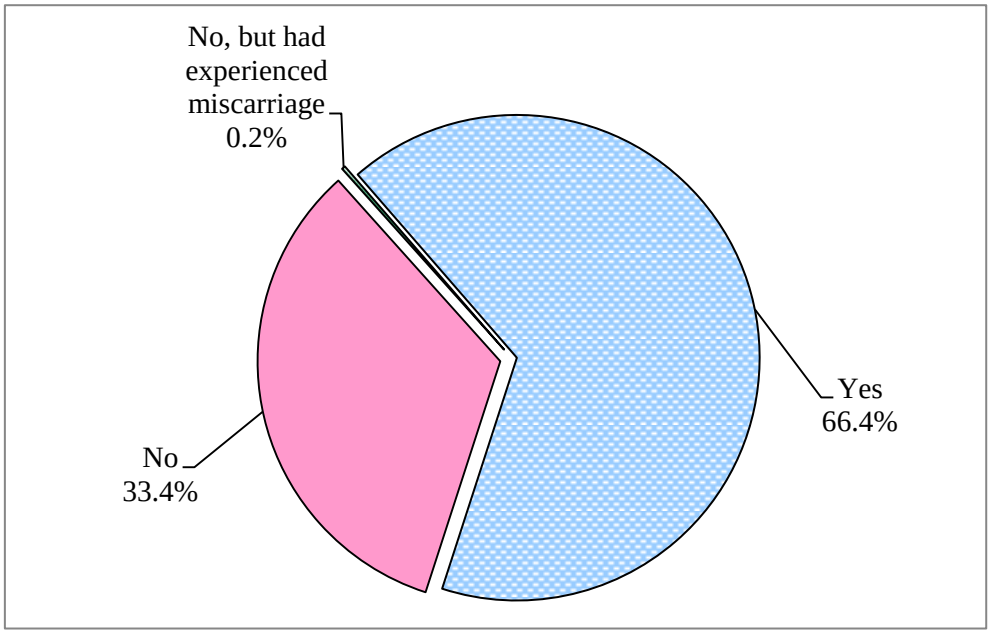
[16] "Menopausal Hormone Replacement Therapy Use and Cancer", National Cancer Institute (http://www.cancer.gov/cancertopics/factsheet/Risk/menopausal-hormones)

3.5.2 Whether had given birth and age of having first child

The risk of breast cancer increases among women who have never given birth or women who gave birth to their first child late[17].

Overall, about two-thirds (66.4%) of female respondents reported that they had given birth (Fig. 3.5.2a).

Fig. 3.5.2a: Whether had given birth (Q14a)

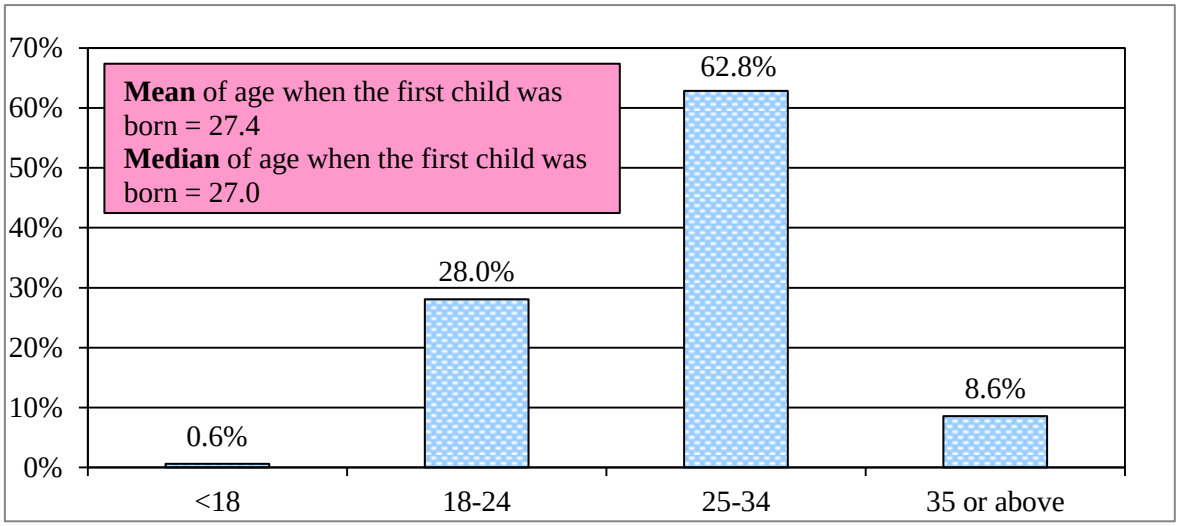


Base: All female respondents excluding 'refuse to answer'=1 103

Among those female respondents who had given birth, 8.6% of them gave birth to their first child at the age 35 or above (Fig. 3.5.2b).

[17] "The Breast Cancer Risk Assessment Tool", National Cancer Institute (NCI) (http://www.cancer.gov/bcrisktool/)

Fig. 3.5.2b: Age of having first child (Q14b)



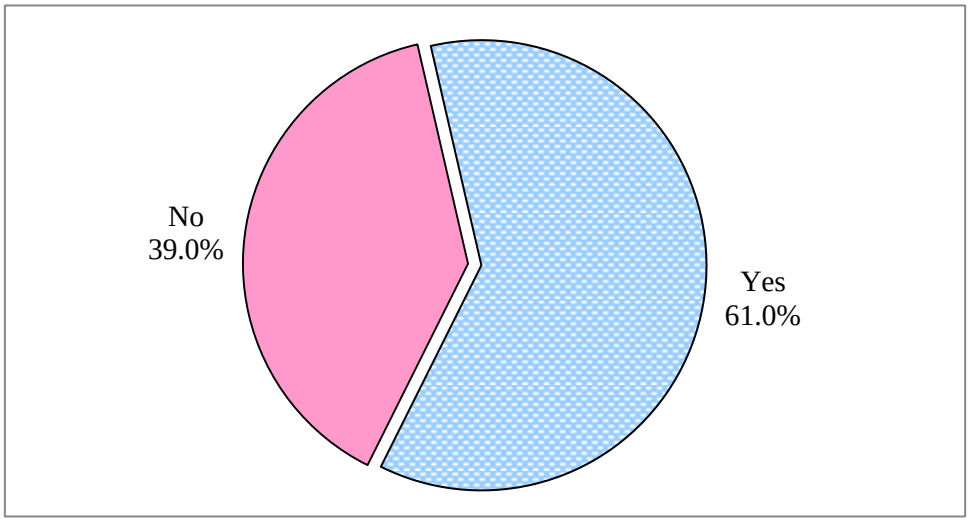
Base: All female respondents who had children excluding 'don't know' and 'refuse to answer'=725

3.5.3 Ever had breastfed children

Breastfeeding helps to reduce the risk of developing breast cancer[18].

More than three-fifths (61.0%) of female respondents who had children reported that they had breastfed their children (Fig. 3.5.3).

Fig. 3.5.3: Ever had breastfed children (Q15)



Base: All female respondents who had children excluding 'not sure'=731

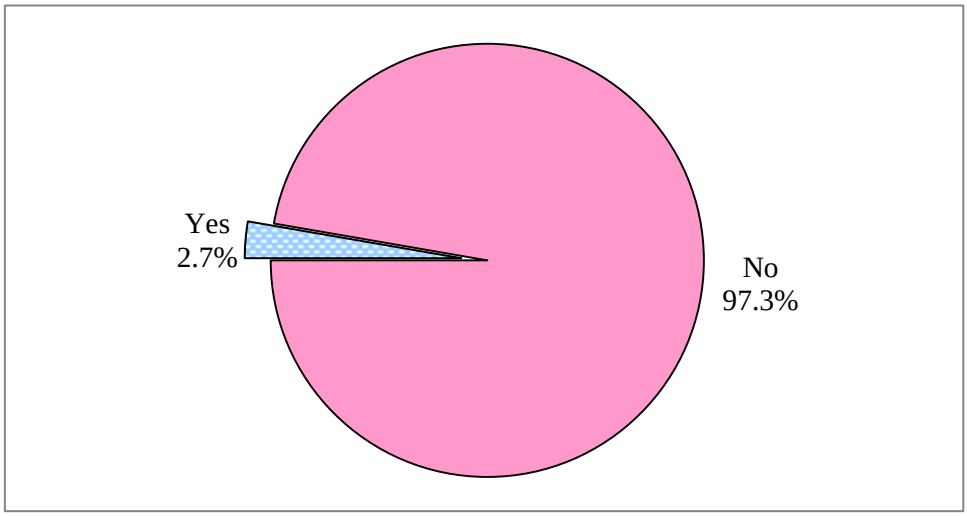
[18] "Breast cancer: prevention and control - Breast cancer risk factors", World Health Organization (http://www.who.int/cancer/detection/breastcancer/en/index2.html)

3.5.4 Whether had first-degree relatives who had breast cancer[19] and the number of first-degree relatives who had breast cancer

Having one or more first-degree relatives who have had breast cancer may increase a woman's chance of developing breast cancer[20].

Overall, 2.7% of the respondents claimed that they had first-degree relatives who had breast cancer at or before age 50 (Fig. 3.5.4a).

Fig. 3.5.4a: Whether had first-degree relatives who had breast cancer at or before age 50 (Q16a)

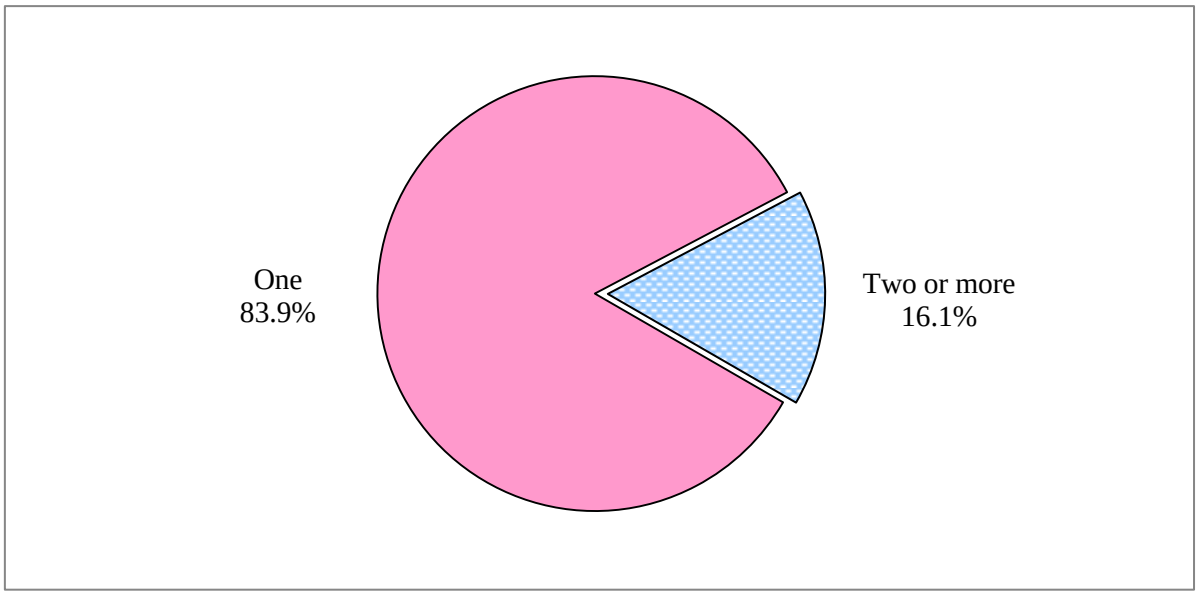


Base: All female respondents excluding 'don't know/not sure' and 'refuse to answer'=1 100

Among those having first-degree relatives who had breast cancer at or before age 50, more than four-fifths (83.9%) of the respondents reported that one first-degree relative had breast cancer at or before age 50, while more than one-tenth (16.1%) reported that two or more first-degree relatives had breast cancer at or before age 50 (Fig. 3.5.4b).

[19] Respondents were told that first-degree relatives meant father/ mother/ brothers/ sisters/ daughters/ sons. Respondents were informed that male breast cancers were included.
[20] "The Breast Cancer Risk Assessment Tool", National Cancer Institute (NCI) (http://www.cancer.gov/bcrisktool)

Fig. 3.5.4b: Number of first-degree relatives who had breast cancer at or before age 50 (Q16b)

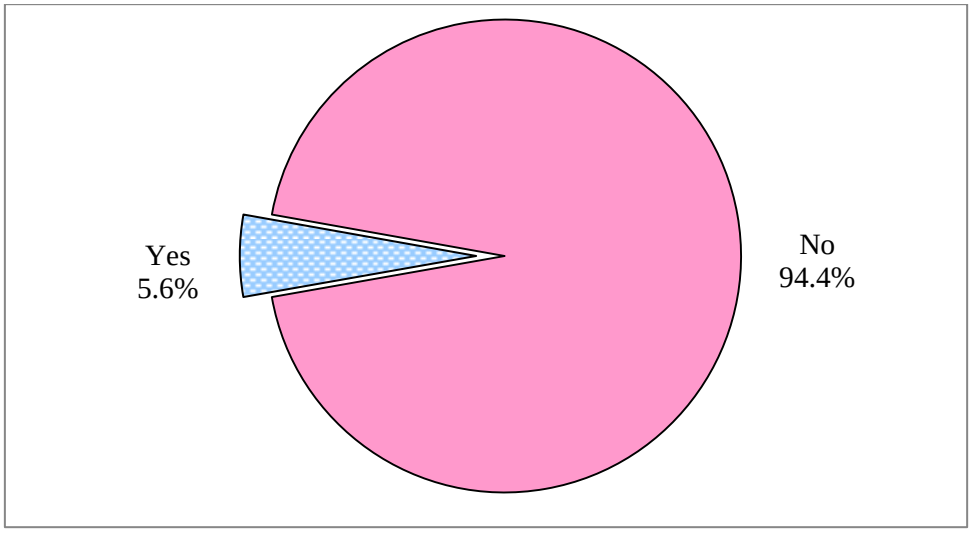


Base: All female respondents who had first-degree relatives who had breast cancer at or before age 50=30

3.5.5 Whether had second-degree relatives[21] who had breast cancer and the number of second-degree relatives who had breast cancer

Overall, 5.6% of the respondents claimed that they had second-degree relatives who had breast cancer (Fig. 3.5.5a).

Fig. 3.5.5a: Whether had second-degree relatives who had breast cancer (Q17a)

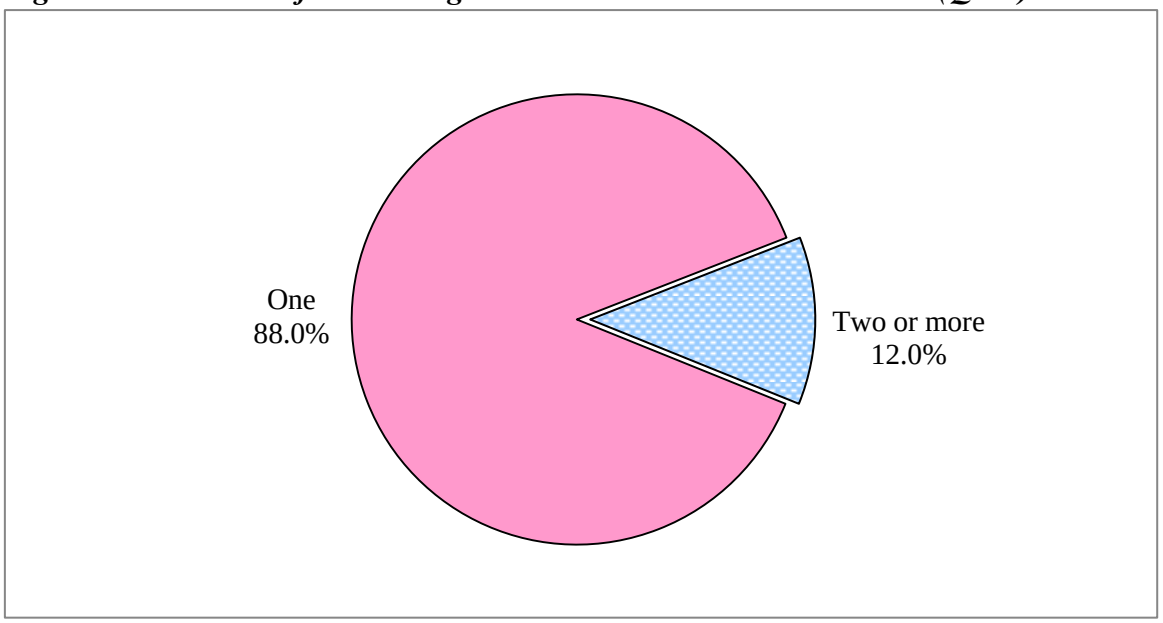


Base: All female respondents excluding 'don't know/not sure' and 'refuse to answer'=1 071

Among those having second-degree relatives who had breast cancer, more than four-fifths (88.0%) of the respondents reported that one second-degree relative had breast cancer, while more than one-tenth (12.0%) reported that two or more second-degree relatives had breast cancer (Fig. 3.5.5b).

[21] Respondents were told that second-degree relatives meant grandfather/ grandmother/ granddaughters/ grandsons/ aunts/ uncles/ nephews/ nieces. Respondents were informed that male breast cancers were included.

Fig. 3.5.5b: Number of second-degree relatives who had breast cancer (Q17b)

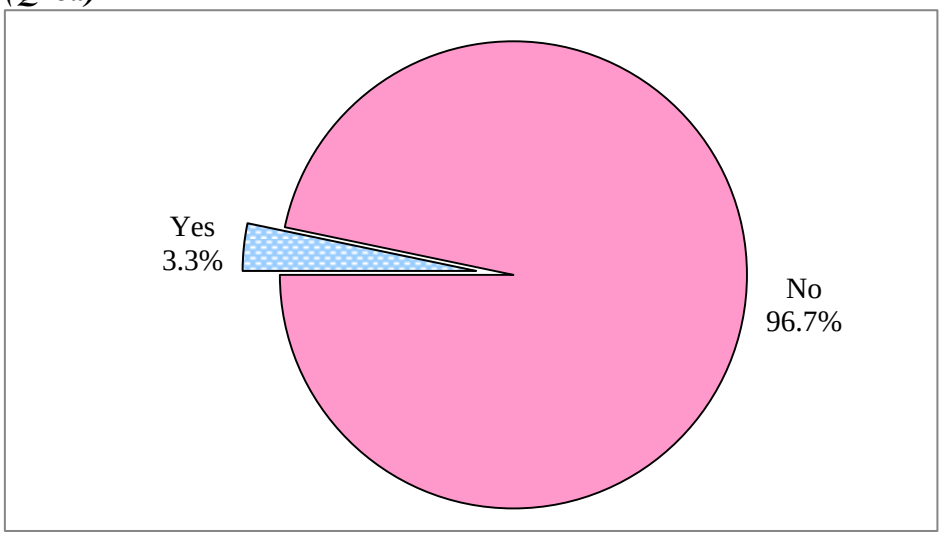


Base: All female respondents who had second-degree relatives who had breast cancer=60

3.5.6 Whether had first-degree or second-degree female relatives who had ovarian cancer and the number of first-degree or second-degree female relatives who had ovarian cancer

Overall, 3.3% of the respondents claimed that they had first-degree or second-degree female relatives who had ovarian cancer (Fig. 3.5.6a).

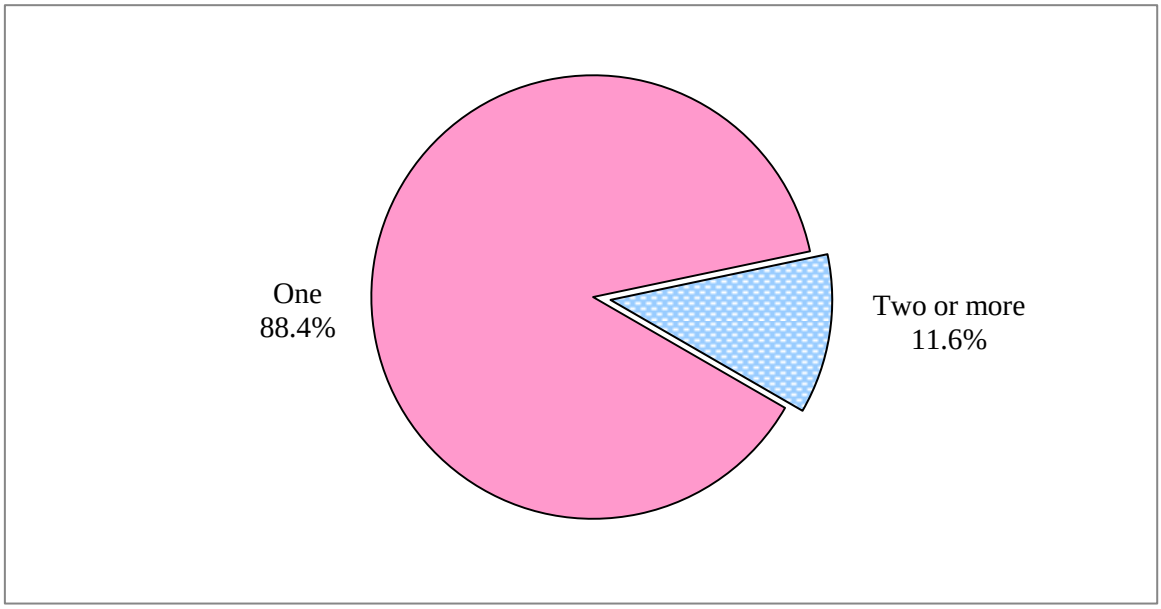
Fig. 3.5.6a: Whether had first-degree or second-degree relatives who had ovarian cancer (Q18a)



Base: All female respondents excluding 'don't know/not sure' and 'refuse to answer'=1 078

Among those having first-degree or second-degree relatives who had ovarian cancer, more than four-fifths (88.4%) of the respondents reported that one first-degree or second-degree relative had ovarian cancer, while more than one-tenth (11.6%) reported that two or more first-degree or second-degree relatives had ovarian cancer (Fig. 3.5.6b).

Fig.3.5.6b: Number of first-degree or second-degree relatives had ovarian cancer (Q18b)



Base: All female respondents who had first-degree or second-degree relatives who had ovarian cancer=35

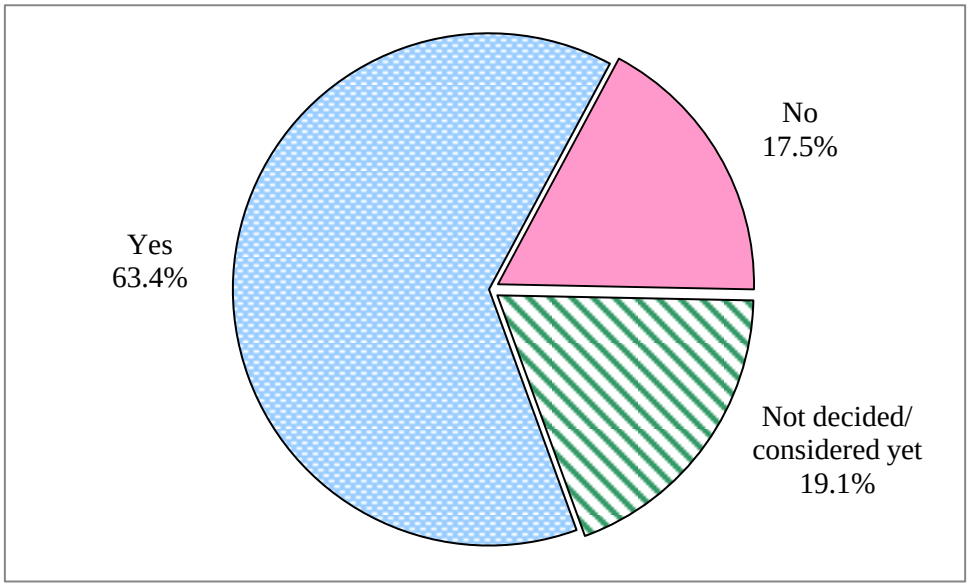
3.6 Attitude towards organ donation

In this section, four questions were asked to understand respondents' attitude towards organ and body donation.

3.6.1 Willingness to donate organs after death

When being asked if respondents were willing to donate their organs after death, nearly one-fifth (19.1%) of them had not decided or considered it yet. While about three-fifths of the respondents (63.4%) reported that they were willing to donate their organs after death, less than one-fifth (17.5%) of them reported that they were not willing to do so (Fig. 3.6.1).

Fig. 3.6.1: Willingness to donate organs after death (Q19)

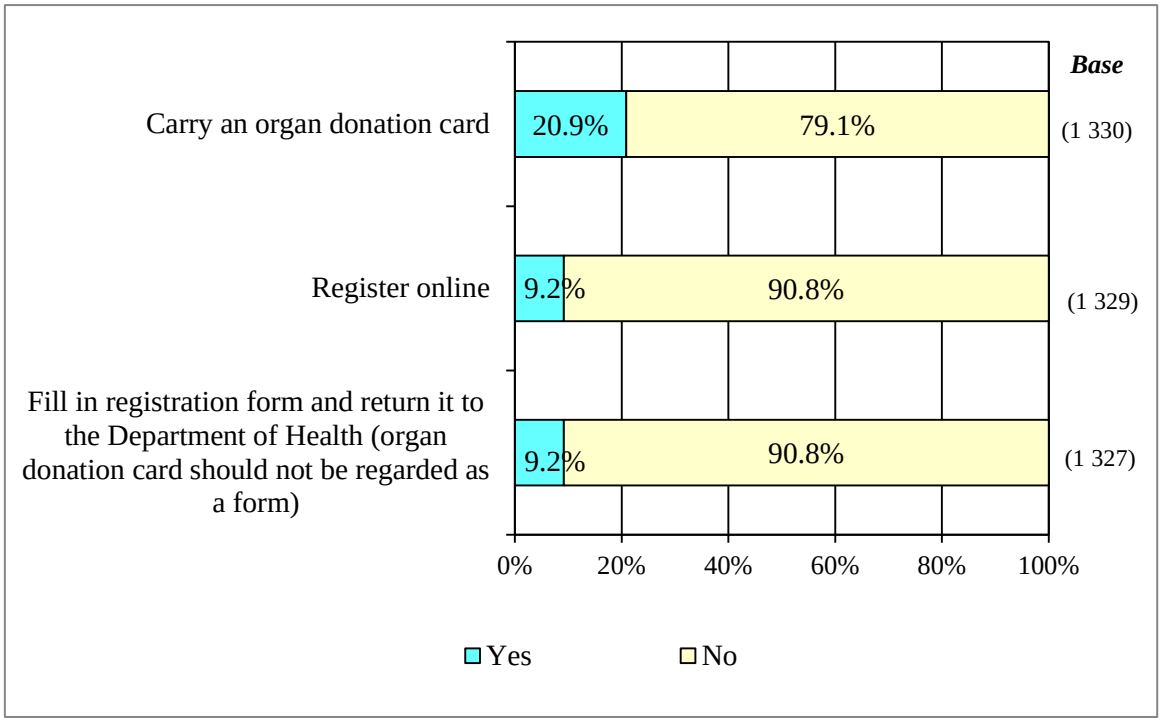


Base: All respondents excluding 'refuse to answer' = 2 098

3.6.2 Ways to express wish to donate organ

Among those respondents who were willing to donate their organs, 20.9% of them carried an organ donation card to express their wish to donate organ, less than one-tenth (9.2%) of them registered online and less than one-tenth (9.2%) of them filled in registration form and returned it to the Department of Health (Fig. 3.6.2).

Fig. 3.6.2: Methods chosen to express wish to donate organs (Q20a-Q20c)

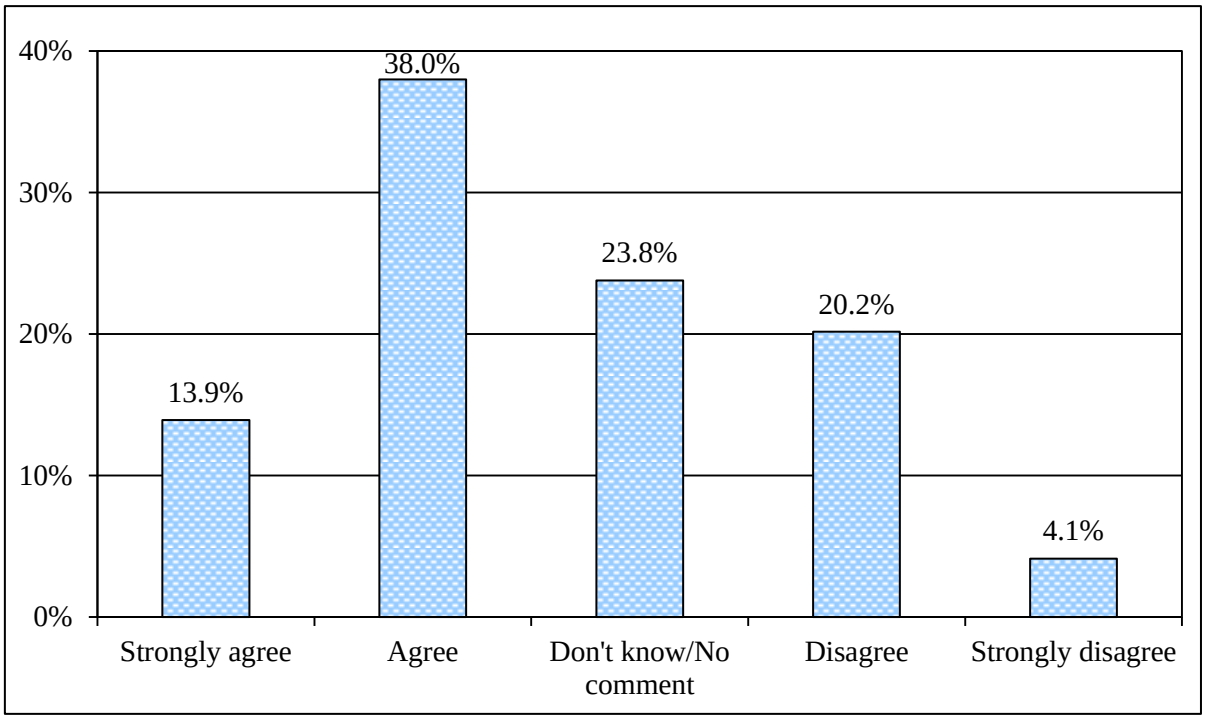


Base: Respondents who were willing to donate their organs excluding 'don't know/not sure'

3.6.3 To what extent the respondents agreed or disagreed that everyone should be assumed to be willing to donate organs after death unless having clearly expressed objection beforehand

Respondents were asked about the extent to which they agreed or disagreed with the suggestion that everyone should be assumed to be willing to donate organs after death unless having clearly expressed objection beforehand. About half (51.9%) of respondents strongly agreed or agreed to the suggestion. On the other hand, nearly a quarter (24.3%) of respondents strongly disagreed or disagreed to the suggestion. And more than one-fifth (23.8%) of respondents stated that they did not know or had no comment about this suggestion (Fig. 3.6.3).

Fig. 3.6.3: To what extent the respondents agreed or disagreed that everyone should be assumed to be willing to donate organs after death unless having clearly expressed objection beforehand (Q21)



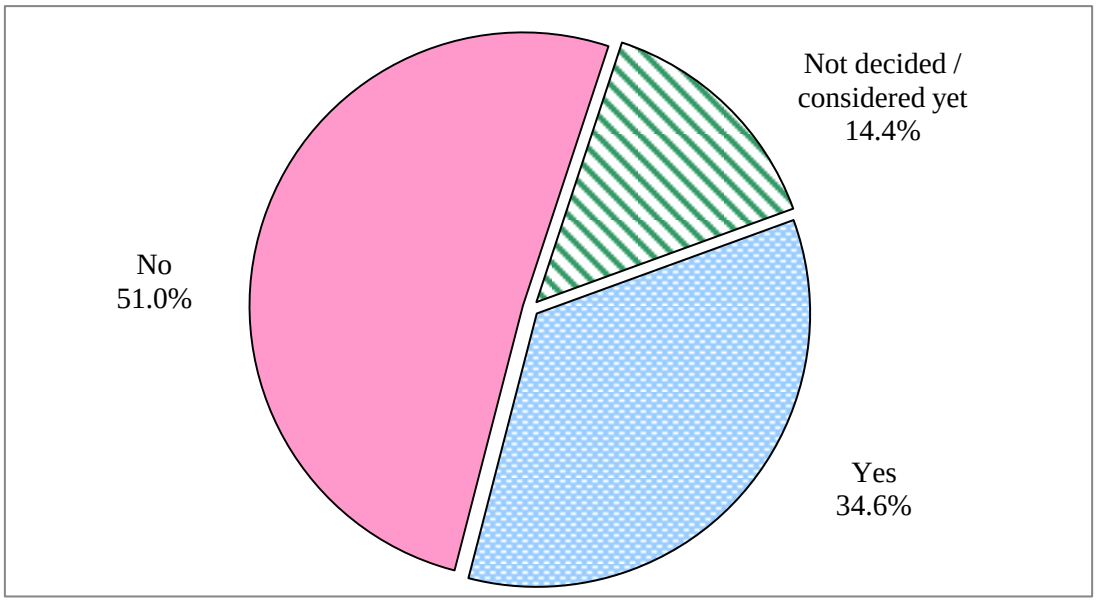
Base: All respondents excluding 'refuse to answer' = 2 104

3.6.4 Willingness to donate body after death for medical education and research

Respondents were asked whether they were willing to donate their dead body intact for medical education and research, for example as teaching aids for medical students to learn about the human body.

About one-third (34.6%) of respondents expressed that they were willing to donate their bodies after death, while over half (51.0%) of respondents expressed that they were not willing to donate their bodies after death. And more than one-tenth (14.4%) of respondents had not decided and considered yet (Fig. 3.6.4).

Fig. 3.6.4: Willingness to donate body after death for medical education and research (Q22)

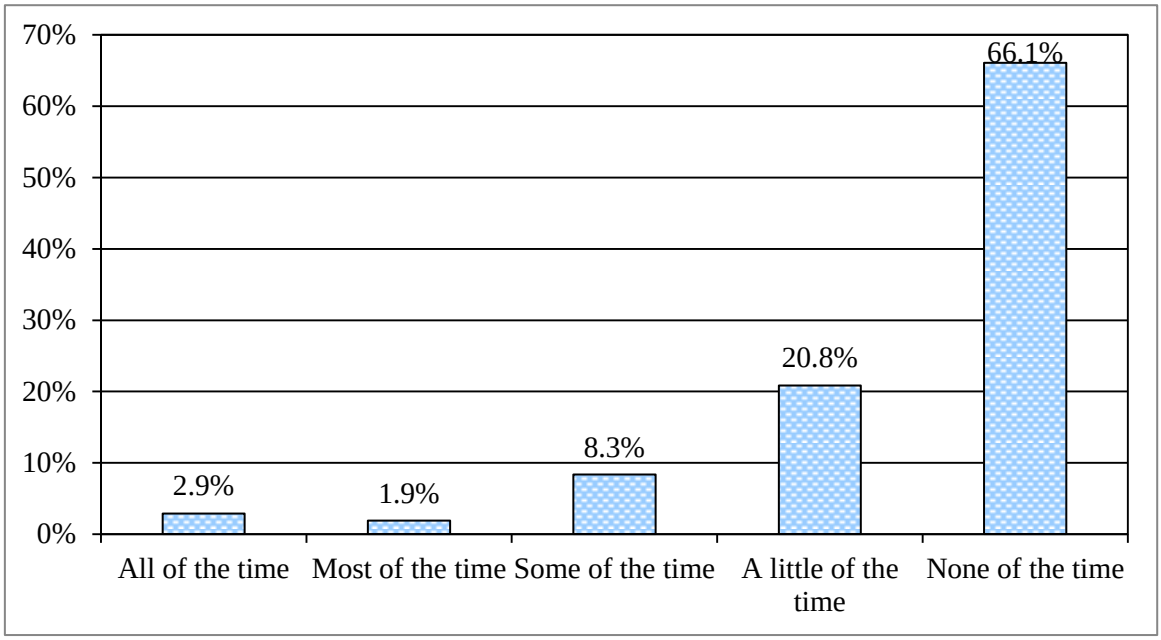


Base: All respondents excluding 'refuse to answer' = 2 092

3.7 Constipation

About one-third (33.9%) of respondents had ever had constipation[22] during the thirty days prior to the survey, including 4.8% of respondents who reported that they had constipation all or most of the time during those thirty days (Fig. 3.7).

Fig. 3.7: Frequency of having constipation during the thirty days prior to the survey (Q23)



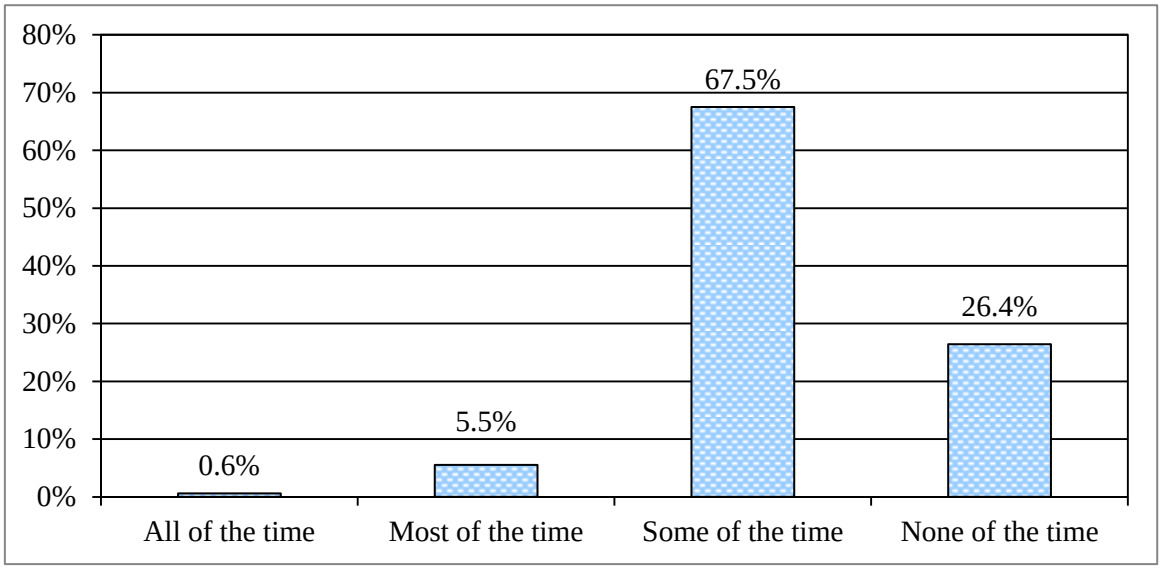
Base: All respondents excluding 'refuse to answer' = 2 104

[22] Respondents were explained that constipation symptoms included having a bowel movement fewer than three times per week, straining to pass hard or dry faeces or having the sensation of incomplete bowel evacuation.

3.8 Jaywalking

More than a quarter of pedestrians (26.4%) reported that they never jay-walked (such as crossing the road by ignoring traffic light instructions, not using zebra-crossing or footbridge when they are available). In contrast, 6.1% claimed that they did not comply with traffic instructions "all" or "most" of the time when they crossed the road (Fig. 3.8).

Fig. 3.8: The extent of jaywalking, such as not using zebra-crossing or footbridge to cross road (Q24)



Base: All respondents excluding 'those who did not cross roads' and 'refuse to answer' = 2 102

Chapter 4 Sub-group Analysis by Demographic Information and Related Questions

4.1 Re-grouping of variables

In this chapter, sub-group analyses are performed based on the breakdown of respondents' demographic information including gender, age, educational attainment, marital status, occupation, monthly household income and type of living quarters to see if there are any significant associations between these demographic factors and the areas being investigated.

Some of the responses have been re-grouped into smaller number of categories in order to make the sub-group analyses more robust. Table 4.1a shows how the demographic variables have been re-grouped while Table 4.1b illustrates how the responses of some questions were combined. The response of 'don't know', 'not sure', 'not applicable', 'refuse to answer' and 'outliers' have been excluded from all the sub-group analyses in this chapter except questions related to Food Pyramid (Q4) and Organ Donation (Q21).

Table 4.1a: Re-grouping the responses of demographic information (Q1, Q25 – Q31)

Demographic variable	Original level	Re-grouped level	Sample size (weighted)
Gender	Male	Male	1 001
	Female	Female	1 104
Age group	No grouping	18 – 24	258
		25 – 34	411
		35 – 44	449
		45 – 54	535
		55 – 64	438
Age group (For colorectal cancer risk)	No grouping	18-34	669
		35-49	704
		50-64	718
Educational attainment	Primary or below	Primary or below	212
	Lower secondary (F.1 – F.3)	Lower secondary (F.1 – F.3)	346
	Upper secondary (F.4 – F.6)/ Matriculation	Upper secondary (F.4 – F.6)/ Matriculation	661
	Tertiary (Non-degree, degree or above)	Tertiary (Non-degree, degree or above)	883
Marital status	Never married	Never married	666
	Married with child(ren)	Married	1 336
	Married without child(ren)		
	Divorced/ Separated	Divorced/ Separated/ Widowed	92
	Widowed		

Table 4.1a: Re-grouping the responses of demographic information (Q1, Q25 – Q31)(Continued)

Demographic variable	Original level	Re-grouped level	Sample size (weighted)
Monthly household income	Less than $2,000	Below $8,000	106
	$2,000 - $3,999		
	$4,000 - $5,999		
	$6,000 - $7,999		
	$8,000 - $9,999	$8,000 - $13,999	267
	$10,000 - $11,999		
	$12,000 - $13,999		
	$14,000 - $15,999	$14,000 - $19,999	182
	$16,000 - $17,999		
	$18,000 - $19,999		
	$20,000 - $24,999	$20,000 - $39,999	634
	$25,000 - $29,999		
	$30,000 - $34,999		
	$35,000 - $39,999		
	$40,000 - $44,999	$40,000 or above	543
	$45,000 - $49,999		
	$50,000 - $54,999		
	$55,000 - $59,999		
	$60,000 or above		
Occupation	Employer/ Manager/ Administrator	Managerial/ Professional worker	463
	Professional		
	Associate professional		
	Clerk	Clerk	299
	Service worker	Service worker / Shop sales worker	150
	Shop sales worker		
	Skilled agricultural/ Fishery worker	Blue collar worker	263
	Craft and related worker		
	Plant and machine operator and assembler		
	Unskilled worker		
	Student	Not working	848
	Home-maker		
	Unemployed person		
	Retired person		
	Others for no occupation		
Type of living quarters	Public rental flats	Public rental flats	617
	Housing Authority subsidized sale flats	Subsidized sale flats	369
	Housing Society subsidized sale flats		
	Private residential flats	Private housing	1 098
	Villas/ Bungalows/ Modern village houses		
	Simple stone structures/ Traditional village houses		
	Staff quarters		

Table 4.1b: Re-grouping the responses of questions

Question No.	Question content	Original level	Re-grouped level
Q4a	Which food group that we should eat the most every day based on the recommendation of the Food Pyramid for adults	Grains and Cereals	Grains and Cereals
		Fruits	Other food types / Don't know / Not sure
		Vegetables	
		Dairy Products	
		Meat, poultry, fish, egg and dry beans	
		Oil, salts and sweets	
Q4b	Which food group that we should eat the least every day based on the recommendation of the Food Pyramid for adults	Oil, salts and sweets	Oil, salts and sweets
		Fruits	Other food types / Don't know / Not sure
		Vegetables	
		Grains and Cereals	
		Dairy Products	
		Meat, poultry, fish, egg and dry beans	
Q4c	Number of servings of fruit that at least we should eat every day based on the recommendation of the Food Pyramid for adults	2 servings	2 servings
		1 serving	Other servings / Don't know / Not sure
		3 servings	
		4 servings	
		5 servings or above	
Q4d	Number of servings of vegetables that at least we should eat every day based on the recommendation of the Food Pyramid for adults	3 servings	3 servings
		1 serving	Other servings / Don't know / Not sure
		2 servings	
		4 servings	
		5 servings or above	
Q5	Number of bowls of grains consumed per day	No grouping	Less than 3 bowls
			3-10 bowls
Q6	Number of servings of meat consumed per day	No grouping	Less than 4 servings
			4-12 servings

Table 4.1b: Re-grouping the responses of questions (Continued)

Question No.	Question content	Original level	Re-grouped level
Q7	Number of servings of dried beans and soybean products consumed per day	No grouping	Less than 1 serving
			1-2 servings
			More than 2 servings
Q8	Number of servings of milk products consumed per day	No grouping	Less than 1 serving
			1-4 servings
Q9	Number of servings of milk alternatives consumed per day	No grouping	Less than 1 serving
			1-2 servings
			More than 2 servings
Q10	Number of eggs consumed per week	No grouping	Less than 4 eggs
			4-7 eggs
			More than 7 eggs
Q13	Ever taken hormonal replacement therapy for menopausal symptoms or other reasons	Yes, and still taking	Yes, and still taking /Yes, but has stopped now
		Yes, but has stopped now	
		No	No
Q14	Age of having first child	No grouping	24 or below
			25-34
			35 or above
Q21	To what extent the respondents agreed or disagreed that everyone should be assumed to be willing to donate organs after death unless having clearly expressed objection beforehand	Strongly agree	Strongly agree / Agree
		Agree	
		Don't know/No comment	Don't know/No comment
		Disagree	Disagree / Strongly disagree
		Strongly disagree	
Q23	Frequency of having constipation during the thirty days prior to the survey	All of the time	All / Most of the time
		Most of the time	
		Some of the time	Some / A little / None of the time
		A little of the time	
		None of the time	
Q24	The extent of jaywalking, such as not using zebra-crossing or footbridge to cross road	All of the time	All / Most / Some of the time
		Most of the time	
		Some of the time	
		None of the time	None of the time

For the tables which contained cells with expected values of less than 5, the demographic variables were further regrouped such that all expected values were of 5 or above (as shown in Table 4.3.7, 4.3.10, 4.6.2b and 4.6.2c).

Three types of statistical tests are used for sub-group analysis in this report, namely Pearson's chi-square test, Kruskal-Wallis test and Spearman's rank correlation [23].

When both variables are nominal, Pearson's chi-square test is used. When one variable is nominal and the other one is ordinal, the Kruskal-Wallis test is adopted. Spearman's rank correlation is performed when both variables are ordinal. Only statistically significant results at the 5% level are presented in this chapter. Only the Pearson's chi-square test uses weighted data; the Kruskal-Wallis test and Spearman's rank correlation are carried out without weighting as SPSS is unable to handle non-integer weights for these two tests. However, all percentages are reported after weighting.

[23] The statistical tests have been performed using SPSS. Formulae of the statistical tests are included for reference.

Pearson's Chi-square test:

$$\chi^2 = \sum_i \sum_j \frac{(Oij - ij)^2}{ij}$$

where is the observed value corresponding to the i[th] column and the j[th] row, is the expected value corresponding to the i[th] column and the j[th] row. The calculation of is as follow: expected value = (i[th] column total x j[th] row total) / Overall total.

Kruskal-Wallis test:

$$H = \frac{12}{N(N+1)} \sum_{i=1}^{k} \frac{R_i^2}{n_i} - 3(N+1)$$

where N is the total number of observations, R_i is the sum of the ranks of the values of the i[th] sample, n_i is the number of observations of the i[th] sample.

Spearman's rank correlation coefficient:

$$r = \sum_{i=1}^{N} \frac{(X_i - \overline{X})(Y_i - \overline{Y})}{(N-1)SxSy}$$

where N is the sample size and Sx and Sy are the standard deviations of the rank of the two variables, X_i and Y_i are the i[th] rank of X and Y respectively and ¯ and ¯ are the mean rank of X and Y respectively. The rank order of each data value is used in the above formula (adjustments are made if there are ties). Pairwise method is used to handle missing data.

4.2 Doctor-diagnosed chronic diseases

Whether respondents currently have any doctor-diagnosed chronic disease[24] is associated significantly with their educational attainment, marital status, occupation and monthly household income.

The lower the educational attainment of the respondents, the more likely they had more doctor-diagnosed chronic diseases. Also, a relatively higher proportion of divorced/ separated/ widowed respondents (17.2%), blue-collar workers (13.1%) and those had monthly household income of below $8,000 (17.0%) reported that they had at least two doctor-diagnosed chronic diseases when compared with their respective counterparts (Table 4.2).

Table 4.2: Number of doctor-diagnosed chronic disease (Q2a-Q2e)

Variable	Level	Base	0 disease	1 disease	2 or more diseases	p-value	
						Kruskal-Wallis test	Rank Correlation
Educational attainment	Primary or below	199	49.5%	28.1%	22.4%		0.000
	Lower secondary (F.1-F.3)	330	65.5%	21.9%	12.6%		
	Upper secondary (F.4-F.6)/Matriculation	634	69.4%	19.4%	11.2%		
	Tertiary (Non-degree, degree or above)	870	78.5%	17.3%	4.2%		
Marital status	Never married	655	86.9%	10.7%	2.4%	0.000	
	Married	1 284	63.9%	23.6%	12.5%		
	Divorced/Separated/Widowed	87	50.6%	32.3%	17.2%		

[24] These doctor-diagnosed chronic diseases include the specific diseases mentioned in Q2a-d (i.e. hypertension, cardiovascular disease, hypercholesterolemia and diabetes) and other chronic disease(s) specified by the respondents in Q2e.

Table 4.2: Number of doctor-diagnosed chronic disease (Q2a-Q2e)(Continued)

Variable	Level	Base	0 disease	1 disease	2 or more diseases	p-value	
						Kruskal-Wallis test	Rank Correlation
Occupation	Managerial/Professional worker	454	71.7%	21.8%	6.5%	0.001	
	Clerk	291	75.8%	17.0%	7.1%		
	Service/Shop sales worker	147	74.3%	19.8%	5.9%		
	Blue collar worker	246	65.3%	21.6%	13.1%		
	Not working	820	68.8%	19.4%	11.8%		
Monthly household income	Below $8,000	95	50.1%	32.9%	17.0%		0.000
	$8,000-$13,999	257	72.4%	16.6%	11.0%		
	$14,000-$19,999	178	67.4%	22.5%	10.1%		
	$20,000-$39,999	616	73.1%	16.7%	10.2%		
	$40,000 or above	535	71.9%	21.3%	6.8%		

4.3 Knowledge about the Food Pyramid and related eating behaviours

4.3.1 Whether respondents had seen or heard of the Food Pyramid

Whether respondents had seen or heard of the Food Pyramid is associated significantly with their gender, age, educational attainment, marital status, occupation, monthly household income and type of living quarters.

The older the respondents and the lower the educational attainment of respondents, the more likely they had not seen or heard of the Food Pyramid. Also, male respondents (15.9%), those who were divorced/separated/widowed (17.6%), blue collar workers (23.3%) , those who had monthly household income of below $8,000 (15.0%) and those living in public housing estates (13.7%) were more likely to report that they had not seen or heard of the Food Pyramid when compared with their respective counterparts (Table 4.3.1).

Table 4.3.1: Whether respondents had seen or heard of the Food Pyramid (Q3)

Variable	Level	Base	Yes	No	p-value	
					Chi-square test	Kruskal-Wallis test
Gender	Male	999	84.1%	15.9%	0.000	
	Female	1 103	93.6%	6.4%		
Age group	18-24	258	97.8%	2.2%		0.000
	25-34	411	93.0%	7.0%		
	35-44	448	89.7%	10.3%		
	45-54	535	88.5%	11.5%		
	55-64	437	80.2%	19.8%		
Educational attainment	Primary or below	211	72.9%	27.1%		0.000
	Lower secondary (F.1-F.3)	346	82.6%	17.4%		
	Upper secondary (F.4-F.6)/Matriculation	661	92.7%	7.3%		
	Tertiary (Non-degree, degree or above)	881	93.0%	7.0%		

Table 4.3.1: Whether respondents had seen or heard of the Food Pyramid (Q3)(Continued)

Variable	Level	Base	Yes	No	p-value	
					Chi-square test	Kruskal-Wallis test
Marital status	Never married	666	94.5%	5.5%	0.000	
	Married	1 334	86.9%	13.1%		
	Divorced/Separated/Widowed	92	82.4%	17.6%		
Occupation	Managerial/Professional worker	462	92.5%	7.5%	0.000	
	Clerk	299	94.0%	6.0%		
	Service/Shop sales worker	150	86.1%	13.9%		
	Blue collar worker	263	76.7%	23.3%		
	Not working	847	89.8%	10.2%		
Monthly household income	Below $8,000	106	85.0%	15.0%		0.002
	$8,000-$13,999	266	87.4%	12.6%		
	$14,000-$19,999	181	86.8%	13.2%		
	$20,000-$39,999	634	90.6%	9.4%		
	$40,000 or above	542	91.9%	8.1%		
Type of living quarters	Public rental flats	616	86.3%	13.7%	0.024	
	Subsidized sale flats	368	90.6%	9.4%		
	Private housing	1 097	90.2%	9.8%		

4.3.2 Which food group that we should eat the most every day based on the recommendation of the Food Pyramid for adults

Knowing which food group that we should eat the most every day based on the recommendation of the Food Pyramid for adults is associated significantly with the respondents' gender, age, educational attainment, marital status, occupation and monthly household income.

Among those who had seen or heard of the Food Pyramid, the older the respondents and the lower the educational attainment of the respondents, the more likely not knowing that grains and cereals was the recommended food group that we should eat the most every day. Also, a higher proportion of male respondents (52.9%), divorced/separated/widowed respondents (60.2%), blue collar workers (68.0%) and those who had monthly household income of $14,000- $39,999 (ranging from 50.8% to 51.8%) were more likely not knowing that grains and cereals was the recommended food group that we should eat the most every day when compared with their respective counterparts (Table 4.3.2).

Table 4.3.2: Which food group that we should eat the most every day based on the recommendation of the Food Pyramid for adults (Q4a)

Variable	Level	Base	Grains and Cereals	Other food types / Don't know / Not sure	p-value	
					Chi-square test	Kruskal-Wallis test
Gender	Male	840	47.1%	52.9%	0.000	
	Female	1 033	56.0%	44.0%		
Age group	18-24	253	79.4%	20.6%		0.000
	25-34	382	63.4%	36.6%		
	35-44	402	50.2%	49.8%		
	45-54	473	39.5%	60.5%		
	55-64	350	38.2%	61.8%		

Table 4.3.2: Which food group that we should eat the most every day based on the recommendation of the Food Pyramid for adults (Q4a)(Continued)

Variable	Level	Base	Grains and Cereals	Other food types / Don't know / Not sure	p-value	
					Chi-square test	Kruskal-Wallis test
Educational attainment	Primary or below	154	28.3%	71.7%		0.000
	Lower secondary (F.1-F.3)	286	39.1%	60.9%		
	Upper secondary (F.4-F.6)/Matriculation	613	48.4%	51.6%		
	Tertiary (Non-degree, degree or above)	819	63.6%	36.4%		
Marital status	Never married	630	63.4%	36.6%	0.000	
	Married	1 159	46.5%	53.5%		
	Divorced/Separated/Widowed	76	39.8%	60.2%		
Occupation	Managerial/Professional worker	427	51.9%	48.1%	0.000	
	Clerk	281	51.8%	48.2%		
	Service/Shop sales worker	129	45.9%	54.1%		
	Blue collar worker	202	32.0%	68.0%		
	Not working	760	57.6%	42.4%		
Monthly household income	Below $8,000	90	52.5%	47.5%		0.009
	$8,000-$13,999	233	53.4%	46.6%		
	$14,000-$19,999	157	49.2%	50.8%		
	$20,000-$39,999	574	48.2%	51.8%		
	$40,000 or above	498	59.3%	40.7%		

4.3.3 Which food group that we should eat the least every day based on the recommendation of the Food Pyramid for adults

Knowing which food group that we should eat the least every day based on the recommendation of the Food Pyramid for adults is associated significantly with the respondents' gender, age, educational attainment, marital status and occupation.

Among those who had seen or heard of the Food Pyramid, a higher proportion of male respondents (55.1%), married or divorce/separated/widowed respondents (ranging from 56.1% to 57.2%) and blue collar workers (68.5%) were more likely not knowing that oils, salts and sweets was the recommended food group that we should eat the least every day when compared with their respective counterparts. Also, the older the respondents and the lower the educational attainment of respondents, the more likely they did not know that oils, salts and sweets was the recommended food group that we should eat the least every day (Table 4.3.3).

Table 4.3.3: Which food group that we should eat the least every day based on the recommendation of the Food Pyramid for adults (Q4b)

Variable	Level	Base	Oil, salts and sweets	Other food types / Don't know / Not sure	p-value	
					Chi-square test	Kruskal-Wallis test
Gender	Male	840	44.9%	55.1%	0.000	
	Female	1 033	55.0%	45.0%		
Age group	18-24	253	90.2%	9.8%		0.000
	25-34	382	53.7%	46.3%		
	35-44	402	46.6%	53.4%		
	45-54	473	40.5%	59.5%		
	55-64	350	36.8%	63.2%		

Table 4.3.3: Which food group that we should eat the least every day based on the recommendation of the Food Pyramid for adults (Q4b)(Continued)

Variable	Level	Base	Oil, salts and sweets	Other food types / Don't know / Not sure	p-value	
					Chi-square test	Kruskal-Wallis test
Educational attainment	Primary or below	154	36.4%	63.6%		0.000
	Lower secondary (F.1-F.3)	286	37.6%	62.4%		
	Upper secondary (F.4-F.6)/Matriculation	613	48.1%	51.9%		
	Tertiary (Non-degree, degree or above)	819	59.3%	40.7%		
Marital status	Never married	630	63.7%	36.3%	0.000	
	Married	1 159	43.9%	56.1%		
	Divorced/Separated/Widowed	76	42.8%	57.2%		
Occupation	Managerial/Professional worker	427	51.8%	48.2%	0.000	
	Clerk	281	44.2%	55.8%		
	Service/Shop sales worker	129	48.3%	51.7%		
	Blue collar worker	202	31.5%	68.5%		
	Not working	760	59.4%	40.6%		

4.3.4 Number of servings of fruit that at least we should eat every day based on the recommendation of the Food Pyramid for adults

Knowing the number of servings of fruit that at least we should eat every day based on the recommendation of the Food Pyramid for adults is associated significantly with the respondents' gender, occupation and type of living quarters.

Among those who had seen or heard of the Food Pyramid, male respondents (56.5%), service/shop sales workers or blue collar workers (ranging from 62.2% to 62.6%) and those living in public rental flats (56.5%) were more likely to report not knowing that we should eat at least 2 servings of fruit every day based on the recommendation of the Food Pyramid for adults when compared with their respective counterparts (Table 4.3.4).

Table 4.3.4: Number of servings of fruit that at least we should eat every day based on the recommendation of the Food Pyramid for adults (Q4c)

Variable	Level	Base	2 servings	Other servings / Don't know / Not sure	p-value Chi-square test
Gender	Male	840	43.5%	56.5%	0.006
	Female	1 033	49.8%	50.2%	
Occupation	Managerial/Professional worker	427	51.2%	48.8%	0.001
	Clerk	281	45.7%	54.3%	
	Service/Shop sales worker	129	37.4%	62.6%	
	Blue collar worker	202	37.8%	62.2%	
	Not working	760	51.0%	49.0%	
Type of living quarters	Public rental flats	532	43.5%	56.5%	0.048
	Subsidized sale flats	334	52.1%	47.9%	
	Private housing	990	47.2%	52.8%	

4.3.5 Number of servings of vegetables that at least we should eat every day based on the recommendation of the Food Pyramid for adults

Knowing the number of servings of vegetables that at least we should eat every day based on the recommendation of the Food Pyramid for adults is associated significantly with the respondents' gender, age, educational attainment, occupation, monthly household income and type of living quarters.

Among those who had seen or heard of the Food Pyramid, male respondents (77.0%), blue collar workers (87.0%), those who had monthly household income of below $8,000 to $13,999 (ranging from 77.3% to 78.6%) and those living in public rental flats (80.3%) were more likely not knowing that we should eat at least 3 servings of vegetables every day when compared with their respective counterparts. The older the respondents and the lower the educational attainment of respondents, the more likely not knowing that we should eat at least 3 servings of vegetables every day (Table 4.3.5).

Table 4.3.5: Number of servings of vegetables that at least we should eat every day based on the recommendation of the Food Pyramid for adults (Q4d)

Variable	Level	Base	3 servings	Other servings / Don't know / Not sure	p-value	
					Chi-square test	Kruskal-Wallis test
Gender	Male	840	23.0%	77.0%	0.005	
	Female	1 033	28.8%	71.2%		
Age group	18-24	253	31.2%	68.8%		0.000
	25-34	382	31.4%	68.6%		
	35-44	402	29.8%	70.2%		
	45-54	473	23.7%	76.3%		
	55-64	350	16.0%	84.0%		

Table 4.3.5: Number of servings of vegetables that at least we should eat every day based on the recommendation of the Food Pyramid for adults (Q4d)(Continued)

Variable	Level	Base	3 servings	Other servings / Don't know / Not sure	p-value	
					Chi-square test	Kruskal-Wallis test
Educational attainment	Primary or below	154	10.4%	89.6%		0.000
	Lower secondary (F.1-F.3)	286	16.3%	83.7%		
	Upper secondary (F.4-F.6)/Matriculation	613	24.0%	76.0%		
	Tertiary (Non-degree, degree or above)	819	34.3%	65.7%		
Occupation	Managerial/Professional worker	427	31.5%	68.5%	0.000	
	Clerk	281	31.2%	68.8%		
	Service/Shop sales worker	129	29.6%	70.4%		
	Blue collar worker	202	13.0%	87.0%		
	Not working	760	24.5%	75.5%		
Monthly household income	Below $8,000	90	22.7%	77.3%		0.001
	$8,000-$13,999	233	21.4%	78.6%		
	$14,000-$19,999	157	27.6%	72.4%		
	$20,000-$39,999	574	23.3%	76.7%		
	$40,000 or above	498	33.9%	66.1%		
Type of living quarter	Public rental flats	532	19.7%	80.3%	0.000	
	Subsidized sale flats	334	25.5%	74.5%		
	Private housing	990	29.9%	70.1%		

4.3.6 Number of bowls of grains consumed per day

The average number of bowls of grains consumed per day is associated significantly with the respondents' gender, age, educational attainment and occupation.

The older the respondents and the lower the educational attainment of the respondents, the more likely they consumed less than 3 bowls of grains per day. Also, a higher proportion of female respondents (72.6%) and non-working respondents (70.7%) were more likely to consume less than 3 bowls of grains per day when compared with their respective counterparts (Table 4.3.6).

Table 4.3.6: Number of bowls of grains consumed per day (Q5)

Variable	Level	Base	Less than 3 bowls	3-10 bowls	p-value	
					Kruskal-Wallis test	Rank Correlation
Gender	Male	999	53.8%	46.2%	0.000	
	Female	1 098	72.6%	27.4%		
Age group	18-24	257	58.5%	41.5%		0.000
	25-34	410	59.2%	40.8%		
	35-44	447	61.9%	38.1%		
	45-54	535	67.8%	32.2%		
	55-64	435	68.3%	31.7%		
Educational attainment	Primary or below	211	68.5%	31.5%		0.004
	Lower secondary (F.1-F.3)	345	65.8%	34.2%		
	Upper secondary (F.4-F.6)/Matriculation	659	63.6%	36.4%		
	Tertiary (Non-degree, degree or above)	880	61.7%	38.3%		
Occupation	Managerial/Professional worker	461	59.7%	40.3%	0.000	
	Clerk	298	64.9%	35.1%		
	Service/Shop sales worker	150	59.7%	40.3%		
	Blue collar worker	263	50.5%	49.5%		
	Not working	844	70.7%	29.3%		

4.3.7 Number of servings of dried beans and soybean products consumed per day

The average number of servings of dried beans and soybean products consumed per day is associated significantly with the respondents' gender, age, educational attainment and marital status.

The older the respondents and the lower the educational attainment of respondents, the more likely they consumed less than 1 serving of dried beans and soybean products per day. Also, female respondents (48.8%) and married respondents (47.4%) were more likely to consume less than 1 serving of dried beans and soybean products per day when compared with their respective counterparts (Table 4.3.7).

Table 4.3.7: Number of servings of dried beans and soybean products consumed per day (Q7)

Variable	Level	Base	Less than 1 serving	1-2 servings	More than 2 servings	p-value	
						Kruskal-Wallis test	Rank Correlation
Gender	Male	904	39.1%	50.3%	10.6%	0.000	
	Female	1 001	48.8%	45.4%	5.8%		
Age group	18-24	246	37.3%	49.9%	12.8%		0.000
	25-34	377	37.7%	51.9%	10.3%		
	35-44	419	44.1%	49.6%	6.3%		
	45-54	476	47.5%	45.1%	7.4%		
	55-64	372	51.7%	42.8%	5.4%		
Educational attainment	Primary or below	176	56.6%	38.3%	5.2%		0.000
	Lower secondary (F.1-F.3)	299	50.9%	41.6%	7.4%		
	Upper secondary (F.4-F.6)/Matriculation	604	40.8%	51.1%	8.1%		
	Tertiary (Non-degree, degree or above)	824	41.6%	49.5%	8.9%		
Marital status	Never married/Divorced/ Separated/Widowed	689	38.5%	50.4%	11.1%	0.000	
	Married	1 211	47.4%	46.3%	6.3%		

4.3.8 Number of servings of milk products consumed per day

The average number of servings of milk products consumed per day is associated significantly with gender, age, marital status and occupation.

Male respondents (66.2%), married respondents (65.7%) and blue collar workers (75.4%) were more likely to consume less than 1 serving of milk products per day when compared with their respective counterparts. Also, the older the respondents, the more likely they consumed less than 1 serving of milk products per day (Table 4.3.8).

Table 4.3.8: Number of servings of milk products consumed per day (Q8)

Variable	Level	Base	Less than 1 serving	1-4 servings	p-value	
					Kruskal-Wallis test	Rank Correlation
Gender	Male	771	66.2%	33.8%	0.003	
	Female	891	57.7%	42.3%		
Age group	18-24	219	45.1%	54.9%		0.000
	25-34	352	53.6%	46.4%		
	35-44	344	65.4%	34.6%		
	45-54	401	68.3%	31.7%		
	55-64	333	67.7%	32.3%		
Marital status	Never married	559	53.7%	46.3%	0.000	
	Married	1 032	65.7%	34.3%		
	Divorced/Separated/Widowed	64	62.1%	37.9%		
Occupation	Managerial/Professional worker	376	64.7%	35.3%	0.001	
	Clerk	243	63.8%	36.2%		
	Service/Shop sales worker	118	61.0%	39.0%		
	Blue collar worker	185	75.4%	24.6%		
	Not working	673	55.4%	44.6%		

4.3.9 Number of servings of milk alternatives consumed per day

The average number of servings of milk alternatives consumed per day is associated significantly with gender and educational attainment.

Male respondents (30.7%) and those with primary or below (31.0%) or lower secondary education (31.0%) were more likely to consume less than 1 serving of milk alternatives consumed per day when compared with their respective counterparts (Table 4.3.9).

Table 4.3.9: Number of servings of milk alternatives consumed per day (Q9)

Variable	Level	Base	Less than 1 serving	1-2 servings	More than 2 servings	p-value	
						Kruskal-Wallis test	Rank Correlation
Gender	Male	962	30.7%	64.4%	4.9%	0.000	
	Female	1 073	22.1%	72.1%	5.8%		
Educational attainment	Primary or below	207	31.0%	66.1%	3.0%		0.023
	Lower secondary (F.1-F.3)	335	31.0%	66.1%	2.9%		
	Upper secondary (F.4-F.6)/Matriculation	629	21.7%	71.8%	6.5%		
	Tertiary (Non-degree, degree or above)	860	26.3%	67.6%	6.1%		

4.3.10 Number of eggs consumed per week

The average number of eggs consumed per week is associated significantly with gender, age, educational attainment, marital status and monthly household income.

Female respondents (73.0%), those with lower secondary education or below (73.0%), divorced/separated/widowed respondents (72.9%) and those had monthly household income of below $13,999 (71.7%) were more likely to consume less than 4 eggs per week when compared with their respective counterparts. Also, the older the respondents, the more likely they consumed less than 4 eggs per week (Table 4.3.10).

Table 4.3.10: Number of eggs consumed per week (Q10)

Variable	Level	Base	Less than 4 eggs	4-7 eggs	More than 7 eggs	p-value	
						Kruskal-Wallis test	Rank Correlation
Gender	Male	963	56.1%	35.6%	8.3%	0.000	
	Female	1 078	73.0%	24.8%	2.2%		
Age group	18-24	249	55.4%	37.1%	7.5%		0.000
	25-34	401	61.5%	33.8%	4.8%		
	35-44	431	62.9%	32.7%	4.3%		
	45-54	518	68.4%	25.9%	5.7%		
	55-64	429	71.4%	24.8%	3.9%		
Educational attainment	Lower secondary (F.1-F.3) or below	538	73.0%	23.9%	3.2%		0.000
	Upper secondary (F.4 – F.6)/Matriculation	641	61.9%	31.6%	6.5%		
	Tertiary (Non-degree, degree or above)	860	62.3%	32.4%	5.3%		
Marital status	Never married	647	59.5%	34.7%	5.8%		
	Married	1 300	67.2%	28.2%	4.6%	0.000	
	Divorced/Separated/Widowed	88	72.9%	20.9%	6.2%		
Monthly household income	Below $13,999	358	71.7%	23.4%	5.0%		0.027
	$14,000-$19,999	179	62.4%	31.4%	6.3%		
	$20,000-$39,999	623	59.5%	34.5%	6.1%		
	$40,000 or above	531	63.8%	31.2%	4.9%		

4.4 Colorectal cancer risk

4.4.1 Whether had first-degree relatives who had colorectal cancer at or before age 60

Whether had first-degree relatives who had colorectal cancer at or before age 60 is associated significantly with age.

Older respondents were more likely to have first-degree relatives who had colorectal cancer at or before age 60 (Table 4.4.1).

Table 4.4.1: Whether had first-degree relatives who had colorectal cancer at or before age 60 (Q11)

Variable	Level	Base	Yes	No	p-value Kruskal-Wallis test
Age group (For colorectal cancer risk)	18-34	667	1.7%	98.3%	0.002
	35-49	704	3.0%	97.0%	
	50-64	713	3.6%	96.4%	

4.4.2a Whether had colonoscopy, flexible sigmoidoscopy or other colonic examination

Whether had colonoscopy, flexible sigmoidoscopy or other colonic examination is associated significantly with age, educational attainment, marital status, occupation, type of living quarters and whether had first-degree relatives who had colorectal cancer.

Respondents who aged 50-64 (28.0%), married respondents (20.3%), managerial/professional worker (21.4%), those living in private housing (19.3%) and those who had first-degree relatives who had colorectal cancer (39.6%) were more likely to report that they had colonoscopy, flexible sigmoidoscopy or other colonic examination when compared with their respective counterparts (Table 4.4.2a).

The lower the educational attainment of respondents, the more likely they had colonoscopy, flexible sigmoidoscopy or other colonic examination. Of note, older respondents were also more likely to have lower educational attainment.

Table 4.4.2a: Whether had colonoscopy, flexible sigmoidoscopy or other colonic examination (Q12a)

Variable	Level	Base	Yes	No	p-value	
					Chi-square test	Kruskal-Wallis test
Age group (For colorectal cancer risk)	18-34	669	7.6%	92.4%		0.000
	35-49	702	13.8%	86.2%		
	50-64	715	28.0%	72.0%		
Educational attainment	Primary or below	212	21.7%	78.3%		0.034
	Lower secondary (F.1-F.3)	346	18.4%	81.6%		
	Upper secondary (F.4-F.6)/Matriculation	659	15.5%	84.5%		
	Tertiary (Non-degree, degree or above)	880	15.8%	84.2%		

Table 4.4.2a: Whether had colonoscopy, flexible sigmoidoscopy or other colonic examination (Q12a)(Continued)

Variable	Level	Base	Yes	No	p-value	
					Chi-square test	Kruskal-Wallis test
Marital status	Never married	666	9.1%	90.9%	0.000	
	Married	1 331	20.3%	79.7%		
	Divorced/Separated/Widowed	92	19.1%	80.9%		
Occupation	Managerial/Professional worker	463	21.4%	78.6%	0.003	
	Clerk	298	11.9%	88.1%		
	Service/Shop sales worker	149	10.9%	89.1%		
	Blue collar worker	262	16.8%	83.2%		
	Not working	846	17.0%	83.0%		
Type of living quarters	Public rental flats	616	12.1%	87.9%	0.001	
	Subsidized sale flats	368	15.8%	84.2%		
	Private housing	1 096	19.3%	80.7%		
Whether had first-degree relatives who had colorectal cancer	Yes	59	39.6%	60.4%	0.000	
	No	2 034	16.0%	84.0%		

4.5 Breast and ovarian cancer risk (for female respondents only)

4.5.1 Ever had breastfed children

Ever had breastfed children is associated significantly with educational attainment, occupation, monthly household income and type of living quarters.

Among the female respondents who had given birth, the lower the educational attainment of the respondents, the more likely they had not breastfed children.

Blue collar workers (46.5%), those had monthly household income of $14,000-$19,999 (53.3%) and those living in subsidized sale flats (44.9%) were more likely to report that they had not breastfed children (Table 4.5.1).

Table 4.5.1: Ever had breastfed children (Q15)

Variable	Level	Base	Yes	No	p-value	
					Chi-square test	Kruskal-Wallis test
Educational attainment	Primary or below	125	43.7%	56.3%		0.000
	Lower secondary (F.1-F.3)	177	55.8%	44.2%		
	Upper secondary (F.4-F.6)/Matriculation	237	55.8%	44.2%		
	Tertiary (Non-degree, degree or above)	192	83.2%	16.8%		
Occupation	Managerial/Professional worker	82	76.9%	23.1%	0.011	
	Clerk	95	65.6%	34.4%		
	Service/Shop sales worker	50	62.8%	37.2%		
	Blue collar worker	53	53.5%	46.5%		
	Not working	433	57.6%	42.4%		
Monthly household income	Below $8,000	42	51.0%	49.0%		0.000
	$8,000-$13,999	116	64.7%	35.3%		
	$14,000-$19,999	68	46.7%	53.3%		
	$20,000-$39,999	187	56.7%	43.3%		
	$40,000 or above	172	76.3%	23.7%		
Type of living quarters	Public rental flats	219	57.2%	42.8%	0.025	
	Subsidized sale flats	127	55.1%	44.9%		
	Private housing	373	66.2%	33.8%		

4.6 Attitude towards organ donation

4.6.1 Willingness to donate organs after death

Willingness to donate organs after death is significantly associated with respondents' gender, age, educational attainment, marital status, occupation, monthly household income and type of living quarters.

Female respondents (64.5%), never married respondents (74.1%), managerial/ professional workers (75.3%) and those living in private housing (67.0%) were more likely to report that they were willing to donate organs after death when compared with their respective counterparts. Also, the younger, the higher the educational attainment and the higher the monthly household income of the respondents, the more likely they reported that they were willing to donate organs after death (Table 4.6.1).

Table 4.6.1: Willingness to donate organs after death (Q19)

Variable	Level	Base	Yes	No	Not decided / considered yet	p-value	
						Chi-square test	Kruskal-Wallis test
Gender	Male	997	62.2%	19.7%	18.2%	0.039	
	Female	1 101	64.5%	15.5%	20.0%		
Age group	18-24	258	77.1%	12.9%	10.0%		0.000
	25-34	408	73.7%	16.7%	9.6%		
	35-44	449	66.8%	15.9%	17.3%		
	45-54	532	57.4%	19.0%	23.7%		
	55-64	437	49.5%	20.7%	29.9%		
Educational attainment	Primary or below	210	38.6%	30.7%	30.7%		0.000
	Lower secondary (F.1-F.3)	344	54.3%	17.1%	28.6%		
	Upper secondary (F.4-F.6)/Matriculation	657	65.6%	16.4%	18.0%		
	Tertiary (Non-degree, degree or above)	883	71.4%	15.3%	13.3%		

Table 4.6.1: Willingness to donate organs after death (Q19)(Continued)

Variable	Level	Base	Yes	No	Not decided / considered yet	p-value	
						Chi-square test	Kruskal-Wallis test
Marital status	Never married	666	74.1%	15.6%	10.3%	0.000	
	Married	1 333	58.8%	18.1%	23.1%		
	Divorced/Separated/Widowed	92	53.1%	20.6%	26.3%		
Occupation	Managerial/Professional worker	463	75.3%	13.4%	11.2%	0.000	
	Clerk	299	67.8%	18.4%	13.8%		
	Service/Shop sales worker	150	62.2%	16.7%	21.0%		
	Blue collar worker	262	53.2%	24.1%	22.7%		
	Not working	843	59.3%	16.8%	23.9%		
Monthly household income	Below $8,000	105	46.5%	20.8%	32.6%		0.000
	$8,000-$13,999	266	53.3%	21.4%	25.3%		
	$14,000-$19,999	182	63.0%	22.4%	14.6%		
	$20,000-$39,999	633	66.1%	17.6%	16.3%		
	$40,000 or above	543	75.1%	13.1%	11.8%		
Type of living quarters	Public rental flats	612	57.3%	20.5%	22.1%	0.003	
	Subsidized sale flats	369	63.1%	17.7%	19.2%		
	Private housing	1 097	67.0%	15.5%	17.5%		

4.6.2 Ways to express wish to donate organs

(A) Carry an organ donation card

Among respondents who were willing to donate organs after death, whether or not respondents had carried an organ donation card to express their wish to donate an organ is significantly associated with their educational attainment, marital status and occupation.

A relatively higher proportion of those with tertiary education or above (22.9%), never married respondents (24.5%) and clerks (27.2%) reported that they had carried an organ donation card to express wish to donate organs when compared with their respective counterparts (Table 4.6.2a).

Table 4.6.2a: Whether had carried an organ donation card to express wish to donate (Q20a)

Variable	Level	Base	Yes	No	p-value	
					Chi-square test	Kruskal-Wallis test
Educational attainment	Primary or below	81	13.4%	86.6%		0.023
	Lower secondary (F.1-F.3)	187	20.0%	80.0%		
	Upper secondary (F.4-F.6)/Matriculation	431	19.7%	80.3%		
	Tertiary (Non-degree, degree or above)	631	22.9%	77.1%		
Marital status	Never married	494	24.5%	75.5%	0.050	
	Married	784	18.8%	81.2%		
	Divorced/Separated/Widowed	49	18.2%	81.8%		
Occupation	Managerial/Professional worker	349	24.8%	75.2%	0.001	
	Clerk	203	27.2%	72.8%		
	Service/Shop sales worker	93	26.0%	74.0%		
	Blue collar worker	140	19.9%	80.1%		
	Not working	500	15.1%	84.9%		

(B) Register online

Among respondents who were willing to donate organs after death, whether or not respondents had registered online to express their wish to donate organ is significantly associated with their gender, age, educational attainment, marital status, occupation and monthly household income.

Female respondents (10.8%), those with tertiary education (13.1%), never married/divorced/separated/widowed respondents (13.1%), service/shop sales workers

(15.5%) and those who had monthly household income of $40,000 or above (12.3%) were more likely to report that they had registered online to express wish to donate organs when compared with their respective counterparts. Also, the younger the respondents, the more likely they had registered online to express wish to donate organs (Table 4.6.2b).

Table 4.6.2b: Whether had registered online to express wish to donate organs (Q20b)

Variable	Level	Base	Yes	No	p-value	
					Chi-square test	Kruskal-Wallis test
Gender	Male	619	7.2%	92.8%	0.022	
	Female	710	10.8%	89.2%		
Age group	18-24	199	12.7%	87.3%		0.000
	25-34	301	13.4%	86.6%		
	35-44	299	8.9%	91.1%		
	45-54	305	7.3%	92.7%		
	55-64	216	3.0%	97.0%		
Educational attainment	Matriculation or below	699	5.6%	94.4%		0.000
	Tertiary (Non-degree, degree or above)	629	13.1%	86.9%		
Marital status	Never married/Divorced/ Separated/Widowed	543	13.1%	86.9%	0.000	
	Married	783	6.5%	93.5%		
Occupation	Managerial/Professional worker	349	12.2%	87.8%	0.001	
	Clerk	203	11.0%	89.0%		
	Service/Shop sales worker	93	15.5%	84.5%		
	Blue collar worker	140	4.2%	95.8%		
	Not working	500	6.5%	93.5%		
Monthly household income	Below $13,999	191	4.9%	95.1%		0.004
	$14,000-$19,999	115	11.8%	88.2%		
	$20,000-$39,999	419	9.1%	90.9%		
	$40,000 or above	408	12.3%	87.7%		

(C) Filled in registration form and returned it to the Department of Health

Among respondents who were willing to donate organs after death, whether or not respondents had filled in the registration form and returned it to the Department of Health to express their wish to donate organ is significantly associated with their educational attainment and type of living quarters.

Those living in private housing (10.7%) were more likely to report that they had filled in registration form and returned it to the Department of Health to express their wish to donate organ. Also, the higher the educational attainment of the respondents, the more likely they had filled in registration form and returned it to the Department of Health (Table 4.6.2c).

Table 4.6.2c: Whether had filled in registration form and returned it to the Department of Health (Q20c)

Variable	Level	Base	Yes	No	p-value	
					Chi-square test	Kruskal-Wallis test
Educational attainment	Lower secondary (F.1-F.3) or below	267	6.7%	93.3%		0.043
	Upper secondary (F.4 – F.6)/Matriculation	430	7.6%	92.4%		
	Tertiary (Non-degree, degree or above)	630	11.3%	88.7%		
Type of living quarters	Public rental flats	350	5.7%	94.3%	0.026	
	Subsidized sale flats	233	10.0%	90.0%		
	Private housing	734	10.7%	89.3%		

4.6.3 To what extent the respondents agreed or disagreed that everyone should be assumed to be willing to donate organs after death unless having clearly expressed objection beforehand

To what extent the respondents agreed or disagreed that everyone should be assumed to be willing to donate organs after death unless having clearly expressed objection beforehand is associated significantly with age and educational attainment.

Those aged 55-64 (56.4%) and those who had upper secondary education or matriculation (54.4%) were more likely to report that they strongly agreed or agreed that everyone should be assumed to be willing to donate organs after death unless having clearly expressed objection beforehand (Table 4.6.3).

Table 4.6.3: To what extent the respondents agreed or disagreed that everyone should be assumed to be willing to donate organs after death unless having clearly expressed objection beforehand (Q21)

Variable	Level	Base	Strongly agree / Agree	Don't know/No comment	Disagree / Strongly disagree	p-value Rank Correlation
Age group	18-24	258	53.2%	17.7%	29.0%	0.008
	25-34	411	50.4%	24.0%	25.6%	
	35-44	449	50.7%	22.7%	26.6%	
	45-54	535	50.0%	27.0%	23.0%	
	55-64	437	56.4%	24.2%	19.3%	
Educational attainment	Primary or below	212	48.2%	36.4%	15.5%	0.004
	Lower secondary (F.1-F.3)	345	52.4%	29.7%	17.9%	
	Upper secondary (F.4-F.6)/Matriculation	661	54.4%	24.0%	21.6%	
	Tertiary (Non-degree, degree or above)	883	50.8%	18.3%	30.9%	

4.6.4 Willingness to donate body after death for medical education and research

Willingness to donate body after death for medical education and research is associated significantly with age, educational attainment, marital status, occupation, monthly household income and type of living quarters.

The younger the respondents, the higher the educational attainment of the respondents and the higher the monthly household income of the respondents, the more likely to report that they were willing to donate their bodies after death for medical education and research. Also, a relatively higher proportion of never married respondents (42.7%), managerial/professional workers (42.5%) and those living in subsidized sale flats (39.2%) were more likely to report that they were willing to donate their bodies after death for medical education and research (Table 4.6.4).

Table 4.6.4: Willingness to donate body after death for medical education and research (Q22)

Variable	Level	Base	Yes	No	Not decided / considered yet	p-value	
						Chi-square test	Kruskal-Wallis test
Age group	18-24	258	43.7%	49.4%	7.0%		0.000
	25-34	404	37.4%	55.4%	7.2%		
	35-44	449	32.9%	53.8%	13.3%		
	45-54	531	32.9%	50.3%	16.9%		
	55-64	436	29.9%	46.1%	24.0%		
Educational attainment	Primary or below	210	22.1%	54.8%	23.1%		0.000
	Lower secondary (F.1-F.3)	344	29.3%	48.0%	22.6%		
	Upper secondary (F.4-F.6)/Matriculation	653	35.9%	49.8%	14.3%		
	Tertiary (Non-degree, degree or above)	882	38.8%	52.1%	9.2%		

Table 4.6.4: Willingness to donate body after death for medical education and research (Q22)(Continued)

Variable	Level	Base	Yes	No	Not decided / considered yet	p-value	
						Chi-square test	Kruskal-Wallis test
Marital status	Never married	664	42.7%	48.2%	9.1%	0.000	
	Married	1 327	30.6%	52.8%	16.6%		
	Divorced/Separated/Widowed	92	35.0%	45.7%	19.3%		
Occupation	Managerial/Professional worker	463	42.5%	47.3%	10.2%	0.000	
	Clerk	299	29.4%	61.1%	9.5%		
	Service/Shop sales worker	149	39.9%	46.8%	13.3%		
	Blue collar worker	261	25.6%	57.2%	17.2%		
	Not working	839	35.2%	47.4%	17.4%		
Monthly household income	Below $8,000	105	28.5%	44.8%	26.7%		0.000
	$8,000-$13,999	262	28.9%	49.8%	21.3%		
	$14,000-$19,999	180	36.0%	52.6%	11.4%		
	$20,000-$39,999	632	37.2%	51.0%	11.8%		
	$40,000 or above	543	41.0%	51.0%	8.0%		
Type of living quarters	Public rental flats	612	30.1%	51.6%	18.3%	0.002	
	Subsidized sale flats	364	39.2%	47.7%	13.1%		
	Private housing	1 096	36.1%	51.6%	12.3%		

4.7 Constipation

Having constipation during the thirty days prior to the survey is associated significantly with respondents' gender, educational attainment, marital status and monthly household income.

Female respondents (5.5%), those who had primary education level or below (7.0%) and divorced/separated/widowed respondents (8.7%) were more likely to report that they had constipation all or most of the time during the thirty days prior to the survey when compared with their respective counterparts. Also, the lower the monthly household income of respondents, the more likely the respondents had constipation all or most of the time during the thirty days prior to the survey (Table 4.7).

Table 4.7: Frequency of having constipation during the thirty days prior to the survey (Q23)

Variable	Level	Base	All / Most of the time	Some / A little / None of the time	p-value	
					Kruskal-Wallis test	Rank Correlation
Gender	Male	1 001	4.0%	96.0%	0.036	
	Female	1 103	5.5%	94.5%		
Educational attainment	Primary or below	212	7.0%	93.0%		0.009
	Lower secondary (F.1-F.3)	345	5.4%	94.6%		
	Upper secondary (F.4-F.6)/Matriculation	661	5.6%	94.4%		
	Tertiary (Non-degree, degree or above)	883	3.4%	96.6%		
Marital status	Never married	666	5.4%	94.6%	0.016	
	Married	1 335	4.2%	95.8%		
	Divorced/Separated/Widowed	92	8.7%	91.3%		
Monthly household income	Below $8,000	106	7.8%	92.2%		0.011
	$8,000-$13,999	267	6.3%	93.7%		
	$14,000-$19,999	182	4.0%	96.0%		
	$20,000-$39,999	634	4.9%	95.1%		
	$40,000 or above	543	3.1%	96.9%		

4.8 Jaywalking

The habit of jaywalking (e.g. ignoring traffic light instructions or not using a zebra crossing or footbridge) was associated significantly with respondents' gender, age, educational attainment, marital status, occupation, monthly household income and type of living quarters.

A higher proportion of male respondents (75.2%), those aged 18-24 (83.1%), never married respondents (82.5%), managerial/professional workers (77.7%) or clerks (77.6%) , those having a monthly household income of $14,000 to $40,000 or above (ranging from 76.5% to 77.0%) and those living in subsidized sale flats (80.0%) reported that they jay-walked all, most or some of the time. Also, the higher the educational attainment of the respondents, the more likely the respondents reported that they jay-walked all, most or some of the time (Table 4.8).

Table 4.8: The extent of jaywalking, such as ignoring traffic instructions or not using zebra-crossing or footbridge to cross road (Q24)

Variable	Level	Base	All / Most/Some of the time	None of the time	p-value	
					Kruskal-Wallis test	Rank Correlation
Gender	Male	999	75.2%	24.8%	0.047	
	Female	1 103	72.2%	27.8%		
Age group	18-24	257	83.1%	16.9%		0.002
	25-34	411	74.5%	25.5%		
	35-44	448	71.4%	28.6%		
	45-54	535	72.9%	27.1%		
	55-64	437	70.2%	29.8%		
Educational attainment	Primary or below	211	65.6%	34.4%		0.000
	Lower secondary (F.1-F.3)	346	67.6%	32.4%		
	Upper secondary (F.4-F.6)/Matriculation	661	74.9%	25.1%		
	Tertiary (Non-degree, degree or above)	881	77.0%	23.0%		

Table 4.8: The extent of jaywalking, such as ignoring traffic instructions or not using zebra-crossing or footbridge to cross road (Q24)(Continued)

Variable	Level	Base	All / Most/Some of the time	None of the time	p-value	
					Kruskal-Wallis test	Rank Correlation
Marital status	Never married	664	82.5%	17.5%	0.000	
	Married	1 335	69.2%	30.8%		
	Divorced/Separated/Widowed	92	74.6%	25.4%		
Occupation	Managerial/Professional worker	463	77.7%	22.3%	0.000	
	Clerk	299	77.6%	22.4%		
	Service/Shop sales worker	150	74.3%	25.7%		
	Blue collar worker	263	75.4%	24.6%		
	Not working	845	68.5%	31.5%		
Monthly household income	Below $8,000	105	71.1%	28.9%		0.005
	$8,000-$13,999	267	69.4%	30.6%		
	$14,000-$19,999	182	77.0%	23.0%		
	$20,000-$39,999	633	76.5%	23.5%		
	$40,000 or above	543	76.6%	23.4%		
Type of living quarters	Public rental flats	616	67.3%	32.7%	0.000	
	Subsidized sale flats	369	80.0%	20.0%		
	Private housing	1 096	74.8%	25.2%		

Chapter 5 Conclusion and Recommendations

5.1 Conclusion

5.1.1 Doctor-diagnosed chronic diseases

More than one-tenth (14.4%) of the respondents claimed that they had hypercholesterolaemia, followed by hypertension (10.9%), diabetes (3.8%) and cardiovascular disease (2.9%).

5.1.2 Knowledge about the Food Pyramid and related eating behaviours

Most of the respondents (89.1%) reported that they had seen or heard of the Food Pyramid.

Among those who had seen or heard of the Food Pyramid, over half (52.0%) of them correctly stated that they should eat "Grains and Cereals" the most every day. And about half (50.4%) of the respondents correctly stated that they should eat "Oil, salts and sweets" the least every day. Moreover, more than two-fifths (47.0%) of the respondents correctly stated that they should eat at least 2 servings of fruit every day. Furthermore, more than a quarter (26.2%) of respondents correctly stated that they should at least eat 3 servings of vegetables every day.

On average, 36.1% of the respondents ate 3 to 6 bowls of grains per day. About half (47.8%) of the respondents consumed 1 to 2 servings of dried beans and soybean products per day. More than one-third (37.3%) of the respondents had 1 to 2 servings of milk products such as yogurts, milk or cheese per day. More than two-thirds (68.5%) of the respondents had 1 to 2 servings of milk alternatives such as calcium-fortified soy milk, bean curd (tofu), or dark green leafy vegetables per day. Nearly two-thirds of the respondents (65.0%) ate less than 4 eggs per week.

5.1.3 Colorectal cancer risk

2.8% of the respondents claimed that they had first-degree relatives who had colorectal cancer at or before age 60. 16.7% of the respondents reported that they had colonoscopy, flexible sigmoidoscopy or other colonic examination. Among those who reported that they had colonoscopy, flexible sigmoidoscopy or other colonic examination, nearly one-third (30.0%) of respondents reported that colonic polyps(s) was(were) found.

5.1.4 Breast and ovarian cancer risk (for female respondents only)

The vast majority (94.2%) of female respondents had never taken hormonal replacement therapy for menopausal symptoms or other reasons while 1.2% of them were still taking hormonal replacement therapy for menopausal symptoms or other reasons and 4.6% of them had taken the therapy but had stopped at the time of survey.

About two-thirds (66.4%) of female respondents reported that they had given birth. Among those female respondents who had given birth, 8.6% of them gave birth to their first child

at the age 35 or above. More than three-fifths (61.0%) of female respondents who had children reported that they had breastfed their children.

2.7% of the female respondents claimed that they had first-degree relatives who had breast cancer at or before age 50. On the other hand, 5.6% of the female respondents claimed that they had second-degree relatives who had breast cancer.

Overall, 3.3% of the female respondents claimed that they had first-degree or second-degree female relatives who had ovarian cancer.

5.1.5 Attitude towards organ donation

About three-fifths of the respondents (63.4%) reported that they were willing to donate their organs after death while less than one-fifth (17.5%) of them reported that they were not willing to do so.

Among those respondents who were willing to donate their organs, 20.9% of them carried an organ donation card to express their wish to donate organs, less than one-tenth (9.2%) of them registered online and less than one-tenth (9.2%) of them filled in registration form and returned it to the Department of Health.

About half (51.9%) of respondents strongly agreed or agreed with the suggestion that everyone should be assumed to be willing to donate organs after death unless having clearly expressed an objection beforehand.

Only about one-third (34.6%) of respondents expressed that they were willing to donate their bodies after death for medical education and research, while about half (51.0%) of respondents expressed that they were not willing to do so.

5.1.6 Constipation

About one-third (33.9%) of respondents had ever had constipation during the thirty days prior to the survey, including 4.8% of respondents who reported that they had constipation all or most of the time during those thirty days.

5.1.7 Jaywalking

More than a quarter of pedestrians (26.4%) reported that they never jay-walked (such as crossing the road by ignoring traffic light instructions, not using zebra-crossing or footbridge when they are available). In contrast, 6.1% claimed that they did not comply with traffic instructions all or most of the time when they crossed the road.

5.2 Recommendations

Some recommendations based on the survey findings are suggested below:

1. Although most (89.1%) of the respondents had seen or heard of the Food Pyramid, only 52.0% and 50.4% of respondents correctly stated we should eat "Grains and Cereals" the most and "Oil, Salts and Sweets" the least every day respectively. And only 47.0% and 26.2% of respondents correctly stated that we should consume at least 2 servings of fruit and at least 3 servings of vegetables per day respectively. Future educational campaign can be organized to educate the general public about the Food Pyramid.

2. The Hong Kong SAR Government's Cancer Expert Working Group on Cancer Prevention and Screening (CEWG) recommends individuals aged 50 to 75 with average risk should discuss with their doctor and consider screening for colorectal cancer. The CEWG also recommends high-risk groups, (e.g. with hereditary bowel disease or with one or more first-degree relatives having colorectal cancer diagnosed at or below 60 years of age etc.) to start colorectal cancer screening at an earlier age and repeated at shorter time intervals. Only 28.0% of respondents aged 50 to 64 reported that they had colonoscopy, flexible sigmoidoscopy or other colonic examination. And only 39.6% of respondents with first-degree relatives with colorectal cancer reported that they had colonoscopy, flexible sigmoidoscopy or other colonic examination. Promotion is needed to encourage those who are aged 50-75 or have a family history of colorectal cancer to seek advice from doctors for assessment of the need of a screening test and to obtain full information on its potential benefits and risks for an informed choice.

3. Only 34.6% of respondents stated that they were willing to donate their bodies after death for medical education and research while 51.0% of them were unwilling to do so. This shows that the general public is still unable to accept the donation of whole body after death. If the Department of Health wishes to promote body donation in addition to organ donation, there should be more promotion of body donation programmes.

4. About 73.6% of the respondents reported that they had crossed the road by ignoring traffic light instructions and not using zebra-crossing or footbridge "all" or "most" or "some" of the time. Publicity and education should be implemented to promote pedestrian safety.

5.3 Limitations

1. Although the data were weighted by the distribution of age, gender and type of living quarters in order to correct for over- or under-representation of all groups in the population, the data were not weighted for the number of eligible respondents in a household and the number of phones in a household, or to account directly for non-response.
2. The use of the 'Next Birthday' rule to select respondent when there is more than one eligible respondent resided in a household by the time of the telephone contact cannot cover people who are always not at home in the evening and weekends.
3. A household telephone survey, by definition, excludes the institutionalized population and households without fixed line telephones, so the findings cannot be generalized to these sub-populations. However, as the fixed line telephone coverage in households still cover around 80%, a household telephone survey should only exclude a small proportion of households.
4. The survey relied on self-reported data and had certain limitations.
    i. Respondents might not be willing to disclose to interviewers and deliberately under-report those behaviours that are socially undesirable or considered as unhealthy (such as jaywalking). Conversely, respondents might over-report those behaviours that are considered desirable (such as the willingness to donate organs).
    ii. Self-reporting behaviour or practices was also subjected to recall bias and recall error. However, the recall period was kept quite short in this survey that would reduce such bias.
5. Finally, this was a cross-sectional study. The causal or time relationship between various factors could not be identified.

Annex A Survey Questionnaire

BEHAVIOURAL RISK FACTOR SURVEY APRIL 2013 QUESTIONNAIRE

Introduction

Hello! My name is _____, an interviewer from the Social Sciences Research Centre of the University of Hong Kong (SSRC). We are commissioned by the Department of Health to conduct a public survey on healthy living. This survey takes approximately 15 minutes to complete. All the information provided by you will be kept strictly confidential and for collective analysis only. If you have any queries on this survey, you can call the SSRC at phone number: 3917 1600 during office hours between 9 am and 6 pm. If you have questions about your rights as a research participant, please contact the Human Research Ethics Committee for Non-Clinical Faculties of the University at 2241 5267.

Respondent selection

[S1] Telephone No. _____
[S2] Interviewer No. _____

Because we are choosing a respondent randomly, please tell me how many household members aged 18-64 years there are at home right now? (Members not at home and foreign domestic helpers were excluded)
[S3]_____ Persons

Who is the one who will next have a birthday? (Interviewer: explain the "Next Birthday" rule if respondent questions)

Q1. Record the gender

1. Male
2. Female

Doctor-diagnosed Chronic Diseases

Q2. Do you have the following doctor-diagnosed chronic diseases? (Interviewer: Read out the answers)

a) Hypertension

1. Yes
2. No
3. Don't know/Not sure

b) Cardiovascular disease

1. Yes
2. No
3. Don't know/Not sure

c) Hypercholesterolaemia

1. Yes
2. No
3. Don't know/Not sure

d) Diabetes

1. Yes
2. No
3. Don't know/Not sure

e) Other chronic disease(s), please specify _____

Knowledge about the Food Pyramid and related eating behaviours

Q3. Have you seen or heard of the Food Pyramid?

1. Yes
2. No (Skip to Q5)
3. Not sure (Skip to Q5)

Q4. As the Food Pyramid for adults recommends,

a) which food group should you 'eat the most' every day?

1. Fruits
2. Vegetables
3. Grains and Cereals
4. Dairy Products
5. Meat, poultry, fish, egg and dry beans
6. Oil, salts and sweets
7. Don't know/Not sure

b) which food group should you 'eat the least' every day?

1. Fruits
2. Vegetables
3. Grains and Cereals
4. Dairy Products
5. Meat, poultry, fish, egg and dry beans
6. Oil, salts and sweets
7. Don't know/Not sure

c) at least how many serving(s) of fruit should you eat every day? One serving of fruit is roughly equal to: 1 medium-sized apple or orange, or half piece of banana, or 2 kiwi fruits or plums, or half cup of grapes or cut fruits. Volume of one cup = 240ml.

1. 1 serving
2. 2 servings
3. 3 servings
4. 4 servings
5. 5 servings or above
6. Don't know/Not sure

d) at least how many serving(s) of vegetables should you eat every day? One serving of vegetables is roughly equal to: half bowl of cooked vegetables, gourds or mushrooms, or 1 bowl of raw leafy vegetables. One bowl refers to a medium-sized rice bowl.

1. 1 serving
2. 2 servings
3. 3 servings
4. 4 servings
5. 5 servings or above

6. Don't know/Not sure

Q5. In the past one month, how many bowl(s) of grains on average did you eat a day, such as rice, congee, noodles, pasta, spaghetti, oatmeal or bread? One bowl of grains is roughly equal to: one bowl of rice or rice-noodles, or 1¼ bowls of noodles, or 1½ bowls of pasta or macaroni, or 2½ bowls of congee, 10 tablespoons of uncooked oatmeal, or 2 slices of large bread. One bowl refers to a medium-sized rice bowl. (Interviewer's prompt: the number can be recorded as half, such as ½ or 1½)

_____ bowls

98. Don't eat grains
99. Don't know/Not sure

Q6. In the past one month, how many serving(s) of meat on average did you eat a day, such as pork, beef, poultry, fish or other seafood? One serving of meat is roughly equal to one tael of meat, or roughly the size of a ping-pong ball. (Interviewer's prompt: the number can be recorded as half, such as ½ or 1½)

_____ servings

98. Don't eat meats
99. Don't know/Not sure

Q7. In the past one month, how many serving(s) of dried beans and soybean products on average did you eat a day, such as soy beans, red beans, bean curd (tofu), etc.? One serving of dried beans and soybean products is roughly equal to ¼ piece of bean curd (tofu), or 4 tablespoons of cooked soybeans, or 6-8 tablespoons of cooked pulses, or 1 piece (15g) bean curd sheet. (Interviewer's prompt: the number can be recorded as half, such as ½ or 1½)

_____ servings

98. Don't eat dried beans or soybean products
99. Don't know/Not sure

Q8. In the past one month, how many serving(s) of milk products on average did you eat or drink a day, such as milk, yogurt or cheese, excluding evaporated milk, condensed milk, milk supplement, and cheese products such as cheese cake? One serving is roughly equal to: 1 cup of milk, or 150ml of yogurt, or two slices of pre-cut cheese. (Interviewer's prompt: the number can be recorded as half, such as ½ or 1½)

_____ servings

98. Don't eat or drink milk products
99. Don't know/Not sure

Q9. In the past one month, how many serving(s) of milk alternatives on average did you eat or drink a day, such as calcium-fortified soy milk, bean curd (tofu), or dark green leafy vegetables? One serving is roughly equal to: 1 cup of calcium-fortified soy milk, or half piece of bean curd (tofu), or 1½ bowls of cooked Chinese kale, small Chinese white cabbage (bok choy), Chinese amaranth, spinach or Chinese flowering cabbage. (Interviewer's prompt: the number can be recorded as half, such as ½ or 1½)

_____ servings

98. Don't eat or drink milk alternatives
99. Don't know/Not sure

Q10. In the past one month, how many eggs on average did you eat a week, such as chicken or duck egg? (Interviewer's prompt: the number can be recorded as half, such as ½ or 1½)

_____ pieces

98. Don't eat eggs
99. Don't know/Not sure

Colorectal Cancer Risk

Q11. Have any of your first-degree relatives had colorectal cancer at or before age 60? (First-degree relatives mean father/mother/brothers/sisters/daughters/sons but not including yourself)

1. Yes
2. No
3. Don't know/Not sure

Q12a. Have you ever had colonoscopy, flexible sigmoidoscopy or other colonic examination?

1. Yes
2. No (skip to Q13)
3. Don't know/Not sure (skip to Q13)

Q12b. Was (were) there any colonic polyp(s) found at the time of examination?

1. Yes, colonic polyp(s) was (were) found
2. No, no colonic polyp was found
3. Don't know/Not sure

Breast and Ovarian Cancer Risk (Female respondents only)

Q13. Have you ever taken hormonal replacement therapy for menopausal symptoms or other reasons?

1. Yes, and still taking
2. Yes, but has stopped now
3. No
4. Not sure

Q14. Have you ever given birth ?

1. Yes
2. No (skip to Q16)
3. No, but have experienced miscarriage (skip to Q16)

If yes, how old were you when your first child was born?

At _____years old

Q15. Have you ever breastfed your child(ren) ?

1. Yes
2. No
3. Not sure

Q16. Have any of your first-degree relatives had breast cancer at or before age 50?
(First-degree relatives mean mother/father/sisters/brothers/daughters/sons, but not including yourself. Male breast cancers are included as well.)

1. Yes
2. No
3. Don't know/Not sure

If yes, how many relatives?

_____relatives

Q17. Have any of your second-degree relatives had breast cancer?
(Second-degree relatives mean grandmothers/grandfathers/granddaughters/grandsons/ aunts/uncles/nephews/nieces. Male breast cancers are included as well.)

1. Yes
2. No
3. Don't know/Not sure

If yes, how many relatives?_____relatives

Q18. Have any of your first-degree or second-degree female relatives had ovarian cancer? (First-degree female relatives mean mother/sisters/daughters, but not including yourself. Second-degree female relatives mean grandmothers/granddaughters/aunts/nieces.)

1. Yes
2. No
3. Don't know/Not sure

If yes, how many relatives?

_____relatives

Organ Donation

Q19. Are you willing to donate your organs after death?

1. Yes
2. No (Skip to Q21)
3. Not decided / considered yet (Skip to Q21)
4. Refuse to answer (Skip to Q21)

Q20. Have you used any of the following ways to express your wish to donate organ? (Interviewer: Read out the answers)

a) Carry an organ donation card

1. Yes
2. No

b) Register online

1. Yes
2. No

c) Fill in registration form and return it to the Department of Health (organ donation card should not be regarded as a form)

1. Yes
2. No

Q21. In Hong Kong, organ donation after death is voluntary and informed consent would be obtained from family members beforehand. Some people suggest that unless having clearly expressed objection beforehand, everyone should be assumed to be willing to donate organs after death. To what extent do you agree or disagree with this suggestion?

1. Strongly agree
2. Agree
3. Don't know/No comment
4. Disagree
5. Strongly disagree

Q22. Apart from donating body organs or tissues for transplantation, one may also donate the dead body intact or otherwise for medical education and research, for example as teaching aids for medical students to learn about human body. Are you willing to donate your body after death for this purpose?

1. Yes
2. No
3. Not decided / considered yet
4. Refuse to answer

Constipation

Q23. In the past 30 days, how often did you have constipation? It includes having a bowel movement fewer than three times per week, straining to pass hard or dry faeces, or having the sensation of incomplete bowel evacuation. (Interviewer: Read out 1-5 answers)

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time

Jaywalking

Q24. How often do you jay-walk, including ignore traffic light instructions, not using zebra-crossing or footbridge when they are available? (Interviewer: Read out 1-4 answers)

1. All of the time
2. Most of the time
3. Some of the time

4. None of the time
5. N/A as do not cross roads

Demographic characteristics

Please tell us more about yourself in order to facilitate our analysis. All information collected would be kept strictly confidential.

Q25. What is your age?
_____years (99-refuse to answer)

Q26. What is your highest educational attainment? (Interview: read out the answers one by one)

1. Primary or below
2. Lower secondary (F.1 – F.3)
3. Upper secondary (F.4 – F.6)/Matriculation
4. Tertiary (Non-degree, degree or above)
5. Refuse to answer

Q27. What is your marital status? (Interview: read out the answers one by one)

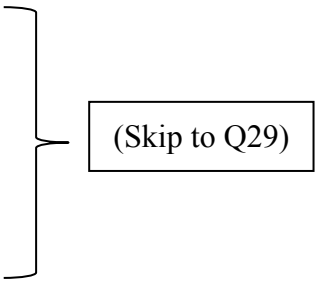
1. Never married
2. Married and with child (ren)
3. Married and without child (ren)
4. Divorced or Separated
5. Widowed
6. Refuse to answer

Q28a. Are you currently engaged in a job?

1. Yes
2. No (skip to Q28c)

Q28b. What is your occupation? (Interviewer: record the details of occupation)

1. Employer/Manager/Administrator
2. Professional
3. Associate Professional
4. Clerk
5. Service worker
6. Shop sales worker



7. Skilled agricultural/fishery worker
8. Craft and related worker
9. Plant and machine operator and assembler
10. Unskilled worker
11. Other

(Skip to Q29)

Q28c. You are a … (Interviewer: read out the answers one by one)

1. Student
2. Home-maker
3. Unemployed person
4. Retired person
5. Other (Please specify_____)

(Skip to Q30)

Q29. How much is your monthly personal income, including all sources of income?

1. None
2. $1-1,999
3. $2,000-3,999
4. $4,000-5,999
5. $6,000-7,999
6. $8,000-9,999
7. $10,000-11,999
8. $12,000-13,999
9. $14,000-15,999
10. $16,000-17,999
11. $18,000-19,999
12. $20,000-24,999
13. $25,000-29,999
14. $30,000-34,999
15. $35,000-39,999
16. $40,000-44,999
17. $45,000-49,999
18. $50,000 or above
19. Refuse to answer

Q30. How much is your monthly household income, including all sources of income?

1. Less than $2,000
2. $2,000-3,999
3. $4,000-5,999

4. $6,000-7,999
5. $8,000-9,999
6. $10,000-11,999
7. $12,000-13,999
8. $14,000-15,999
9. $16,000-17,999
10. $18,000-19,999
11. $20,000-24,999
12. $25,000-29,999
13. $30,000-34,999
14. $35,000-39,999
15. $40,000-44,999
16. $45,000-49,999
17. $50,000-54,999
18. $55,000-59,999
19. $60,000 or above
20. Don't Know
21. Refuse to answer

Q31. What is your type of living quarter?

1. Public rental flats
2. Housing Authority subsidized sale flats
3. Housing Society subsidized sale flats
4. Private residential flats
5. Villas/ Bungalows/ Modern village houses
6. Simple stone structures/ Traditional village houses
7. Staff quarters
8. Non-domestic quarters
9. Refuse to answer

The survey has come to the end. Thank you very much for your participation. Goodbye!

END