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Behavioural Risk Factor Survey (April 2009)

Main Report

Commissioned by

Surveillance and Epidemiology Branch
Centre for Health Protection
Department of Health

December 2009

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Executive Summary

Introduction

The Social Sciences Research Centre of the University of Hong Kong (SSRC) was commissioned by the Department of Health in April 2009 to conduct a survey on behavioural risk factors. This survey aimed to detect changes in health risk and behaviour as well as to collect further information on the health related behavioural issues among the Hong Kong population. This will provide information to facilitate the planning, implementation and evaluation of health promotion programmes on the prevention of diseases related to lifestyle and behaviour.

The scope of this survey covered the following 15 areas:

- Weight status and waist circumference
- Weight control
- Pattern of physical activities and leisure-time exercises
- Prevalence of adequate / inadequate juice, fruit and vegetable consumption
- Smoking pattern
- Level of psychological distress
- Pattern of alcohol consumption
- Sleeping habits
- Social support
- Meat consumption
- Eating habits in relation to fat and oil
- Constipation
- Cervical screening (for female respondents only)
- General health status
- Demographic information: gender, age, education, marital status, occupation, religion, monthly personal income, monthly household income, household size, number of dependants and type of living quarters.

Research Methodology

This survey was conducted by using Computer Assisted Telephone Interview (CATI). The sample was drawn randomly from a list of telephone numbers, which included unlisted and new numbers. The target respondents were Cantonese, Putonghua or English speaking residents in Hong Kong (excluding domestic helpers) aged 18-64. A bilingual (Chinese and English) questionnaire with 78 questions was used to collect data. Fieldwork took place between the 20th April and 27th May 2009. A sample size of 2 185 successful interviews was achieved. The contact rate was 40.1% and the overall response rate was 63.6%. The width of a 95% confidence interval was at most +/- 2.1%. Weighting was applied based on age and gender in order to make our findings more representative, using the Hong Kong population data compiled by the Census and Statistics Department for end-2008 as reference.

Statistical tests were applied to investigate if there is any significant association between demographics and the response variables. Only the statistically significant findings at the 5% level (2-tailed) are presented in the report.

Key Findings of the Survey

Weight status and control

Using the World Health Organization (WHO)'s standard Asian classification of weight status, about half of the respondents (49.5%) were classified as "normal", 22.5% of the respondents were classified as "obese" and 17.5% were regarded as "overweight", while the remaining (10.4%) were classified as "underweight".

Only 15.5% of respondents claimed that they had a weight difference of more than 10 pounds when compared with one year ago. Among these respondents, 66.6% claimed that they had a weight increase.

Regarding respondents' self-perceived current weight status, close to half (48.1%) of the respondents perceived themselves as "just right". In addition, 42.7% considered themselves as "overweight" while 9.2% considered themselves as "underweight". Female respondents, the older respondents (aged 35 years or above), the married or divorced/ separated/ widowed respondents, those with primary education level or below, managerial/ professional workers, clerks, non-working respondents and service workers were more likely to view themselves as "overweight". Overall, 66.9% of the respondents perceived their weight status in a way consistent with the WHO's weight status classification for Asian, while 18.3% of the respondents overestimated and 14.8% of them underestimated their weight status.

During the twelve months prior to the survey, three-tenths (30.0%) of the respondents had done something deliberately to control their weight, of which 56.2% of them aimed to lose weight. Among those respondents who had done something deliberately to control their weight, the most commonly used methods to control weight were "doing physical exercise" (85.8%) and "changing dietary habit" (73.8%).

Physical activities and leisure-time exercises

For people of all ages, genders and bodily conditions, regular physical activity improves health. However, this survey revealed that most respondents engaged in limited physical activity. Over half (53.0%) of the respondents had not engaged in any moderate physical activity for at least 10 minutes and over three-fifths (62.7%) of respondents had not engaged in any vigorous physical activity for at least 10 minutes a day during the seven days prior to the survey. Overall, 16.9% of respondents reported that they had at least 30 minutes of moderate physical activity, or at least 20 minutes of vigorous physical activity, on 5 or more days a week.

On the other hand, walking was the most common form of physical activity and 71.0% of the respondents had spent at least 10 minutes on walking every day during the seven days prior to the survey. The survey also revealed that respondents had spent long hours sitting during the day, as shown by an average of 6.5 hours per day during weekdays (Monday to Friday) during the seven days prior to the survey.

Based on the categorical scoring of the International Physical Activity Questionnaire (IPAQ) analysis, more than half of the respondents' level of physical activity was classified as "moderate" (55.9%). The proportion of respondents having "high" level of physical activity was 22.9%. Respondents who had not completed secondary or with education at primary or below, blue collar workers or service workers, those with household income below $20,000 and those living in public rental flats were more likely to have "high" level of physical activity than their respective counterparts.

Concerning leisure-time exercise, almost two-fifths (39.5%) of the respondents reported that they exercised less than once a month in their leisure-time. On the other hand, 16.5% of respondents reported that they exercised 4 times or more a week and 33.8% exercised 1 to 3 times a week in their leisure-time.

Fruit and vegetable consumption

Eating enough fruit and vegetables has many health benefits. Adequate consumption of fruit and vegetables as part of the daily diet could help prevent major non-communicable diseases (NCD) such as cardiovascular diseases and certain cancers. Eating a variety of vegetables and fruit could ensure an adequate intake of most micronutrients and dietary fibres.

Most respondents (81.7%) had eaten vegetables on a daily basis while more than half of the respondents (52.1%) had eaten fruit every day. Regular fruit or vegetable juice consumption was found to be uncommon amongst respondents, as only 3.0% of the respondents drank fruit or vegetable juice daily.

Overall, the average daily intake of fruit and vegetables by the respondents was only 3.4 servings (excluding juice). Around one-fifth (20.3%) of the respondents had a daily intake of 5 or more servings of fruit and vegetables per day. Females, those aged 55-64, married respondents, non-working respondents and those living in private housing were more likely to have consumed at least the recommended 5 servings of fruit and vegetables a day than their respective counterparts.

Smoking habits

14.1% of the respondents were current smokers at the time of this survey, of which 13.6% were daily smokers. A relatively higher proportion of current smokers who reported smoking more than 20 cigarettes a day were found amongst male respondents, those aged 45-64, those with primary education level or below or with matriculation education level, blue collar workers and those living in subsidized sale flats.

Pattern of alcohol consumption

More than one-third of the respondents (36.3%) were drinkers who had drunk at least one alcoholic drink during the thirty days prior to the survey. On the whole, drinking during the thirty days prior to the survey was more prevalent among males, those aged 25-34, never married respondents, those with tertiary education level or above, service workers and managerial/ professional workers, those with higher monthly household income and those living in subsidized sale flats and private housing .

Among the drinkers who had drunk alcohol during the thirty days prior to the survey, 23.2% of them reported that they had engaged in binge drinking (drinking 5 or more glasses/cans of alcohol on one occasion) at least once during the thirty days prior to the survey. Binge drinking was more common among male respondents, those aged 18-34, never married respondents, blue collar workers and service workers.

Also among the drinkers who had drunk alcohol during the thirty days prior to the survey, 14.2% of respondents reported that they had drunk so much and exhibited signs of drunkenness. It was more common among respondents aged 18-34 and never married respondents.

Level of psychological distress

The level of psychological distress of the respondents was measured by the Kessler 6-item Psychological Distress Scale (K6). Based on the scale, 6.7% of the respondents were classified as having severe psychological distress during the thirty days prior to the survey. Divorced/ separated/ widowed respondents, those with lower monthly household income and those living in public rental flats had the highest risk of having severe psychological distress.

Of those who had had any of the six psychological distress symptoms during the thirty days prior to the survey, 1.9% had seen a doctor or other health professional because of those emotional problems. Females and respondents with lower monthly household income were more likely to have consulted a health professional for the problems.

Sleeping habits

Most respondents (89.5%) slept for at least six hours per day on average. Among those who slept less than 6 hours per day, a relatively higher proportion were amongst those aged 45-64, divorced/ separated/ widowed respondents, service workers and blue collar workers.

Social Support

11.7% of respondents reported that they did not have any close relatives or friends who can provide help for their private, emotional and financial issues. Generally speaking, males, older respondents, divorced/ separated/ widowed respondents, blue

collar workers, respondents with lower education level and monthly household income and those living in public rental flats and subsidized sale flats were more likely to lack social support.

Meat consumption

During the thirty days prior to the survey, respondents on average consumed 2.6 taels of red meat and 2.4 taels of white meat per day. Overall, over one-quarter (27.6%) of respondents consumed more than 6 taels of meat on average per day and 47.4% of respondents consumed less than 4 taels of meat per day. It was also found that 10.4% of respondents had consumed processed meat on four or more days per week on average during the thirty days prior to the survey.

Eating habits in relation to fat and oil

During the thirty days prior to the survey, almost three-fifths (59.5%) of respondents had the habit of always or often removing fat and skin when eating meat or poultry or choosing lean meat to eat, while more than one-third (35.0%) of respondents had always or often replaced full cream milk or evaporated milk with skimmed milk or low-fat milk.

When eating out during the thirty days prior to the survey, over one-third (37.2%) of respondents had always or often chosen dishes with less oil or fat from the menu, while one-fifth (20.0%) of respondents had always or often actively requested for cooking methods with less oil or fat.

Constipation

Over one-third (37.9%) of respondents reported that they had constipation during the thirty days prior to the survey, of which 4.3% had constipation all or most of the time. Females, divorced/ separated/ widowed respondents, those with education level of primary or below, clerks and those living in public rental flats and subsidized sale flats were more likely to report that they had constipation all or most of the time during the thirty days prior to the survey.

Cervical screening

Close to two-thirds (63.1%) of the female respondents reported that they had had a cervical smear before. Those aged 35-54, married respondents, those who had not completed secondary education or below, those with monthly household income of $40,000 or above and those living in subsidized sale flats or private housing were more likely to have had a cervical smear than their respective counterparts.

Among those female respondents who had had a cervical smear before, more than half (54.7%) of them had their last cervical smear taken within 12 months prior to the survey and more than two-thirds (68.4%) of them reported having a cervical smear at a regular interval.

Among those female respondents who had cervical smears regularly, 60.3% of them had them once a year.

General health status

About one-fifth (20.4%) of respondents claimed that they had at least one doctor-diagnosed chronic disease that requires long-term follow up. A relatively higher proportion of older respondents, divorced/ separated/ widowed respondents, those with lower education level, blue collar workers, non-working respondents and those with monthly household income below $8,000 had at least one doctor-diagnosed chronic disease which required long-term follow up, than their respective counterparts

Less than half (45.8%) of respondents rated their health status "good", "very good" or "excellent", while 5.5% considered their health status was "poor".

Recommendations

Some recommendations based on the survey findings are suggested below:

1. The survey results showed that 40.1% of the respondents were overweight or obese. Besides, over four-fifths (83.1%) of respondents reported that they did not undertake the recommended amounts of physical activities, i.e. at least 30 minutes of moderate physical activity, or at least 20 minutes of vigorous physical activity, on 5 or more days a week. Therefore, the importance of having an appropriate body weight and engaging in regular physical activity needs to be further emphasized. Health promotion programmes could focus on educating the community about the proper methods of maintaining normal body weight and the benefits of regular physical activity, such as reducing the risk of developing various chronic diseases.
2. Only about one-fifth of respondents reported that they had a daily average intake of five or more servings of fruit and vegetables per week. Also from the survey, over one-third of respondents had ever had constipation during the thirty days prior to the survey. Apart from prevention or relief of constipation, sufficient intake of vegetable and fruit can improve general health. Therefore, the benefits of having at least 5 servings of fruit and vegetables a day should be further promoted to encourage healthy diet.
3. In 2009, 6.7% of respondents aged 18-64 were classified as having severe psychological distress. Periodic monitoring of the population's mental health is warranted so as to track any changes and take appropriate action when the situation is being aggravated.
4. While red meat is a good source of protein and iron, it contains relatively more saturated fat which is associated with cardiovascular diseases. Besides, excess consumption of red and processed meats is a probable cause of some cancers so the World Cancer Research Fund recommends meat eaters to limit intake of red

meat and avoid processed meat. As the survey revealed that 16.1% of respondents ate more than 4 taels of red meat per day on average and that 10.4% had consumed processed meat on four or more days per week on average, meat eaters should be advised to consume less than 500 grams (about 13 taels) of red meat a week and very little if any processed meat.

Chapter 1 Introduction

The Social Sciences Research Centre of the University of Hong Kong (SSRC) was commissioned by the Department of Health in April 2009 to conduct a survey on behavioural risk factors.

This survey aimed to detect changes in health risk and behaviour as well as to collect further information on the health related behavioural issues among the Hong Kong population. This will provide information to facilitate the planning, implementation and evaluation of health promotion programmes on the prevention of diseases related to lifestyle and behaviour.

The scope of this survey encompasses the following areas:

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Chapter 2 Research Methodology

2.1 Sampling method

Telephone interview by using Computer Assisted Telephone Interview (CATI) was adopted. A random sample was drawn from 36 000 residential telephone numbers. These numbers were generated from the 2007 English residential telephone directory[1] by dropping the last digit, removing duplicates, adding all 10 possible final digits, randomizing order, and selecting 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].

Where more than one eligible person resided in a household and more than one was present at the time of the telephone contact, the "Next Birthday" rule was applied to each successful contacted residential unit, i.e., the household member who had his/her birthday the soonest was selected. This reduces the over-representation of housewives in the sample.

2.2 Target respondents

Eligible respondents were residents in different 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 53 pre-coded questions and 25 open-ended questions (with 13 demographic questions) was designed 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 61 successfully completed interviews was conducted from 23rd and 24th March 2009 to test the length, logic, wording and format of the questionnaire. The data collected from these pilot interviews were not counted as part of the survey report.

[1] The Chinese residential telephone directory was not used because the total number of telephone contacts is less than the English residential telephone directory. This process has a lower contact rate than pure directory sampling which does not cover unlisted and new numbers.

[2] This selection process includes some business and fax numbers so that the contact rate is lower than a pure directory sample.

2.5 Fieldwork

Fieldwork took place between 20th April and 27th May 2009. Because of the briefing, telephone calls were made between 8:30 p.m. and 10:30 p.m. on 20th April. From 21st April to 24th April, 27th April to 30th April, 4th May to 8th May, 11th May to 15th May, 18th May to 22nd May and 25th May to 27th May, telephone calls were made between 4:00 p.m. and 10:30 p.m. For 25th April, 9th May and 16th May, telephone calls were made between 1:00 p.m. and 6:00 p.m.

2.6 Response rate

A total of 29 418 telephone numbers were attempted. The number of successful interviews was 2 185. Refusal and dropout cases amounted to 1 248. All "not available" (5 820), and "no answer" (5 412) cases were attempted three times before being classified as non-contact cases. The contact rate was 40.1%[3] and the overall response rate was 63.6%[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	2 185
2	Drop-out	247
3	Refusal	1 001
4	Language problems	6
5	Not eligible	767
6	Business lines	1 776
7	Not available	5 820
8	Busy tone	417
9	No answer	5 412
10	Fax/data lines	1 018
11	Invalid	10 769
TOTAL		**29 418**

[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 = (2 185 +247 +1 001 +6 +767 +1 776 +5 820)/29 418 = 40.1%.

[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) = 2 185/(2 185+247+1 001)=63.6%.

[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 sample error

A sample size of 2 185 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, 16.5% of the respondents in the sample claimed that their weight differed by more than 10 pounds when compared with one year ago, and then the conservative 95% confidence interval for the true percentage of the population stating a weight difference for the above question falls between 16.5% ± 2.1%, i.e. 14.4% and 18.6%.

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 standards 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 gender and age proportions when compared with the Hong Kong population data compiled by the Census and Statistics Department (C&SD) for end-2008. The proportions of respondents among age groups 18-24, 50-54 and 60-64 were much higher than the population while the proportions of respondents aged 25-29, 30-34 and 35-39 years old were much lower. The sample also contained a higher percentage of females when compared with the population. Table 2.9a shows the differences in terms of age and gender.

In view of the demographic differences between this sample and the population, weighting was applied by gender and age in order to make the results more representative of the general population. The weights are the ratio of the age and gender 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:

$$\pm 1.96 \times \sqrt{\frac{0.5 \times 0.5}{2185}} \times 100\% = 2.1\%$$

Table 2.9a: Distribution differences of age and gender between this survey and the Hong Kong population data compiled by the C&SD for end-2008

Age Group	This survey			Hong Kong population data – from the C&SD (end 2008)*		
	Male	**Female**	***Total***	**Male**	**Female**	***Total***
	% of Total	% of Total	*% of Total*	% of Total	% of Total	*% of Total*
18-24	**7.78**	**8.48**	16.26	**6.27**	**6.57**	12.84
25-29	**2.73**	**3.84**	6.58	**4.66**	**6.10**	10.76
30-34	**3.52**	**4.40**	7.92	**4.61**	**6.31**	10.92
35-39	**3.20**	**6.30**	9.50	**4.86**	**6.75**	11.61
40-44	**3.47**	**8.57**	12.04	**5.47**	**6.87**	12.35
45-49	**5.00**	**9.68**	14.68	**6.43**	**7.11**	13.54
50-54	**4.31**	**10.38**	14.68	**6.02**	**6.15**	12.17
55-59	**3.57**	**5.65**	9.22	**4.71**	**4.71**	9.41
60-64	**4.45**	**4.68**	9.12	**3.27**	**3.14**	6.40
Total	**38.03**	**61.97**	100.00	**46.29**	**53.71**	100.00

**Provisional figures obtained from the C&SD*

Table 2.9b: Weights by age and gender applied in the analyses

Age	Male	Female
18-24	0.805915101	0.774997295
25-29	1.703431787	1.586751692
30-34	1.310394758	1.432972697
35-39	1.520160001	1.071262176
40-44	1.575248484	0.802319338
45-49	1.285831738	0.734719193
50-54	1.397444570	0.592991607
55-59	1.319334465	0.833407017
60-64	0.734595752	0.670266024
Age data missing	1.000000000	1.000000000

Statistical tests were applied to study the significant differences between sub-groups. Associations between selected demographic information and responses of selected questions were examined. Significance testing was conducted at the 5% level (2-tailed). The statistical software, SPSS for Windows version 17.0 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 and age. 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 weighting was applied to gender and age in this survey, the distribution of gender and age reported in this report matches the Hong Kong Population compiled by the C&SD for end 2008.

Overall, 54.1% of the respondents were females and 48.4% were aged between 30 and 49.

3.1.2 Marital status

Three-fifths (60.0%) of the respondents were married; 52.1% had children and 7.9% did not have a child. On the other hand, more than one-third (34.9%) of the respondents were never married, 3.8% were divorced or separated and 1.2% of respondents were widowed.

3.1.3 Educational attainment

Most of the respondents (72.7%) had secondary education or above **:** 26.4% had completed secondary (F.5), 9.5% had matriculation education and 36.8% attained tertiary education or above. The remaining 27.3% of the respondents had not completed secondary education or had primary education or below.

3.1.4 Occupation

More than one-third (37.1%) of the respondents were not working. This included 8.8% students; 16.4% homemakers; 5.9% unemployed and 6.1% retired persons or other non-working persons.

For working respondents, a relatively higher proportion of respondents were clerks (14.1%), followed by associate professionals (9.4%) and professionals (8.0%).

3.1.5 Income

Close to two-thirds (66.5%) of the respondents had a monthly personal income below $20,000 **:** 38.4% had a monthly personal income of $10,000-$19,999 and 28.0% had a monthly personal income below $10,000.

Regarding the monthly household income, about three-fifths (59.2%) of the respondents had a monthly household income below $30,000: 20.9% had a monthly household income of $20,000-$29,999, 23.9% had a monthly household income of $10,000-$19,999 and 14.3% had a monthly household income below $10,000.

3.1.6 Household size

Overall, 45.9% of respondents claimed that their household sizes were 2-3 persons and 48.3% had at least 4 persons in their household (excluding foreign domestic helpers).

3.1.7 Dependants

Close to two-fifths (39.9%) of the respondents did not have any dependants while about half (45.6%) had 1-2 dependants.

3.1.8 Type of living quarters

About half (47.6%) of the respondents were living in private residential flats, followed by public rental flats (32.5%) and Housing Authority/ Housing Society subsidized sale flats (14.6%).

3.1.9 Religions

More than two-thirds (67.3%) of respondents did not have any religious beliefs. Among those who had religious beliefs, a relatively higher proportion of respondents believed in Christianity (16.0%), followed by Buddhism (11.0%) and Catholicism (4.2%).

Table 3.1: Demographic information (Q1, Q34-Q43)[7]

Gender	**Base =2 185**	**Age**	**Base = 2 159**
Male	45.9%	18-24	12.8%
Female	54.1%	25-29	10.8%
		30-34	10.9%
Marital Status	**Base = 2 179**	35-39	11.6%
Never married	34.9%	40-44	12.3%
Married and with child(ren)	52.1%	45-49	13.5%
		50-54	12.2%
Married and without child	7.9%	55-59	9.4%
		60-64	6.4%
Divorced/ Separated	3.8%		
Widowed	1.2%		

[7] Refer to the question number in the survey questionnaire, see Annex A.

Educational Attainment	**Base =2 185**
Primary or below	11.0%
Had not completed secondary	16.3%
Completed secondary (F.5)	26.4%
Matriculation	9.5%
Tertiary or above	36.8%

Religion	**Base =2 178**
Catholicism	4.2%
Christianity	16.0%
Buddhism	11.0%
Hinduism	0.2%
Muslim	0.2%
Others	1.1%
No religion	67.3%

Occupation	**Base = 2 147**
Employer/ Manager/ Administrator	7.5%
Professional	8.0%
Associate professional	9.4%
Clerk	14.1%
Service worker	6.2%
Shop sales worker	3.5%
Skilled agricultural/ Fishery worker	0.2%
Craft and related worker	4.0%
Plant and machine operator and assembler	3.2%
Unskilled worker	6.8%
Student	8.8%
Home-maker	16.4%
Unemployed person	5.9%
Retired person	6.1%

Monthly Personal Income	**Base =1 245[8]**
Below $10,000	28.0%
$10,000-$19,999	38.4%
$20,000-$29,999	15.4%
$30,000-$49,999	11.8%
$50,000 or above	6.4%

Monthly Household Income	**Base =1 713**
Below $10,000	14.3%
$10,000-$19,999	23.9%
$20,000-$29,999	20.9%
$30,000-$49,999	23.6%
$50,000 or above	17.2%

[8] For non-working respondents, they didn't need to answer the question Q38 (monthly personal income).

Number of dependents	Base =2 171
none	39.9%
1	20.0%
2	25.6%
3	8.2%
4	3.6%
5	2.0%
6	0.4%
7 or above	0.3%

Household Size (excluding foreign domestic helpers)	Base =2 173
1	5.8%
2	15.7%
3	30.2%
4	31.8%
5	12.1%
6	3.4%
7 or above	1.0%

Type of living quarters	Base =2 163
Public rental flats	32.5%
Housing Authority subsidized sale flats	13.7%
Housing Society subsidized sale flats	0.9%
Private residential flats	47.6%
Villas/ Bungalows/ Modern village houses	1.9%
Simple stone structures/ Traditional village house	1.7%
Staff quarters	1.7%

3.2 Weight status and control

Fourteen questions were asked in this section to ascertain the respondents' height, weight, waist circumference and their weight controlling methods. According to respondents' reported height and weight, their Body Mass Index (BMI) was derived and classified to assess their weight status according to the World Health Organization (WHO) classifications (both European and Asian Standards).

Those respondents with a body height out of the suggested range 100-190cm, body weight out of the suggested range 37-120kg, waist circumference out of the suggested range 50-120cm, or who were pregnant were treated as outliers and excluded from height, weight and waist circumference analyses (section 3.2.1 to 3.2.3). Subsequently, a total of 14 outlier cases for height or weight including three pregnant women respondents were excluded from analyses in sections 3.2.4 to 3.2.8. In addition, 62 cases were also excluded from the BMI analyses due to missing data for height or weight.

3.2.1 Height (when not wearing shoes)

The reported height of respondents when not wearing shoes ranged from 114.3 to 190.0cm. Almost two-fifths (39.1%) of the respondents were within the range from 160.0 to less than 170.0cm, followed by 29.1% in the range from 150.0 to less than 160.0cm. The overall mean and median heights were 163.7cm and 162.6cm respectively (Table 3.2.1).

Table 3.2.1: Height distribution of respondents (percentage, mean and median) (Q2a)

Height (cm)	Number	% of Total
100.0 – <150.0	50	2.3%
150.0 – <160.0	625	29.1%
160.0 – <170.0	840	39.1%
170.0 – <180.0	545	25.4%
180.0 – 190.0	88	4.1%
Total	***2 148****	***100.0%***
Mean	163.7cm	
Median	162.6cm	

**All respondents excluding outliers, "don't know" and refusal*

3.2.2 Weight (wearing light clothes)

The reported weight of respondents when wearing simple clothes ranged from 37.4 to 110.0kg. More than one-third (36.6%) of the respondents fell into the weight range from 50.0 to less than 60.0kg, followed by 25.2% of the respondents in the range from 60.0 to less than 70.0kg. The overall mean and median weights were 60.7kg and 59.1kg respectively (Table 3.2.2).

Table 3.2.2: Weight distribution of respondents (percentage, mean and median) (Q2b)

Weight (kg)	Number	% of Total
37.0 – <40.0	7	0.3%
40.0 – <50.0	341	16.0%
50.0 – <60.0	782	36.6%
60.0 – <70.0	538	25.2%
70.0 – <80.0	305	14.3%
80.0 – 120.0	166	7.7%
Total	***2 139****	***100.0%***
Mean	60.7kg	
Median	59.1kg	

**All respondents excluding outliers, "don't know" and refusal*

3.2.3 Waist circumference

The reported waist circumference of the respondents ranged from 53.3cm to 116.8cm. Almost two-fifths (39.9%) of the respondents had their waist circumference in the range from 70.0 to less than 80.0 cm, followed by 26.3% in the range from 60.0 to less than 70.0cm. The overall mean and median waist circumferences were 75.9cm and 76.2cm respectively (Table 3.2.3).

Table 3.2.3: Waist circumference distribution of respondents (percentage, mean and median) (Q2c)

Waist circumference (cm)	Number	% of Total
50.0 – <60.0	15	0.7%
60.0 – <70.0	550	26.3%
70.0 – <80.0	835	39.9%
80.0 – <90.0	548	26.1%
90.0 – 120.0	147	7.0%
Total	***2 096****	***100.0%***
Mean	75.9cm	
Median	76.2cm	

**All respondents excluding outliers, "don't know" and refusal*

3.2.4 Body Mass Index (BMI)

BMI was derived from weight and height by the following formula:

$$BMI = body\ weight\ (kg) / [height\ (m)]^2$$

3.2.4.1 Weight status by WHO classification

According to WHO's European and Asian classification of weight status, respondents were classified into four categories of weight status (underweight, normal, overweight and obese) as in Table 3.2.4.1a and Table 3.2.4.1b respectively.

According to the European standard, about two-thirds of the respondents (67.1%) were classified as "normal", 18.9% of respondents were classified as "overweight" and 3.7% were classified as "obese". On the other hand, about one-tenth (10.4%) of the respondents were regarded as "underweight" (Table 3.2.4.1a).

Table 3.2.4.1a: WHO classification for weight status (European standard) (Q2a & Q2b)

Weight status by WHO classifications	BMI	Number	% of Total
Underweight	BMI < 18.5	219	10.4%
Normal	BMI 18.5 – <25.0	1 415	67.1%
Overweight	BMI 25.0 – <30.0	398	18.9%
Obese	BMI ≥ 30.0	77	3.7%
	Total	***2 109****	***100.0%***

**All respondents excluding outliers and missing data for height or weight*

Based on the Asian standard, about half of the respondents (49.5%) were classified as "normal", 22.5% of the respondents were classified as "obese" and 17.5% were regarded as "overweight", while the remaining 10.4% were classified as "underweight" (Table 3.2.4.1b).

Table 3.2.4.1b: WHO classification for weight status (Asian standard) (Q2a & Q2b)

Weight status by WHO classifications	BMI	Number	% of Total
Underweight	BMI < 18.5	219	10.4%
Normal	BMI 18.5 – <23.0	1 045	49.5%
Overweight	BMI 23.0 – <25.0	370	17.5%
Obese	BMI ≥ 25.0	475	22.5%
	Total	***2 109****	***100.0%***

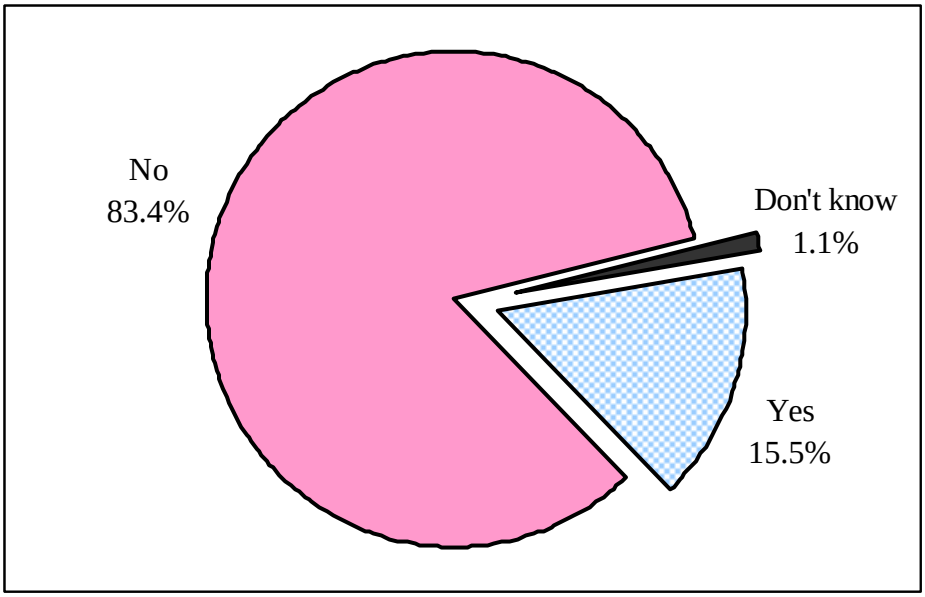
**All respondents excluding outliers and missing data for height or weight*

3.2.5 Weight difference from one year ago

When respondents were asked whether they had a weight difference of more than about 10 pounds compared with one year ago, more than four-fifths (83.4%) of the respondents reported that they did not have such a difference and only 15.5% reported that they had weight difference (Fig. 3.2.5a).

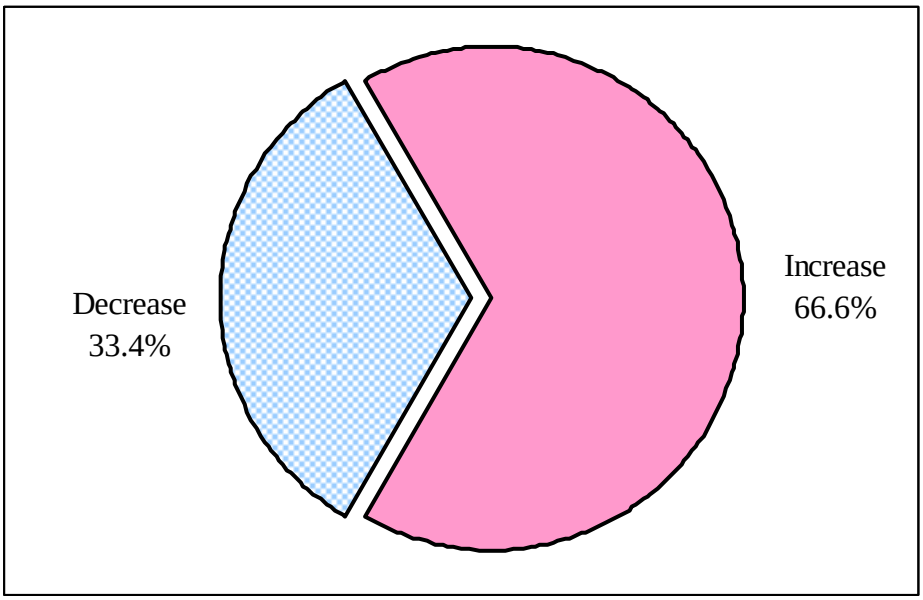
Of those respondents who reported such a weight difference, two-thirds (66.6%) claimed that they had a weight increase while the rest one-third (33.4%) reported that they had a weight reduction of more than 10 pounds (Fig. 3.2.5b).

Fig. 3.2.5a: Weight differed by more than 10 pounds when compared with one year ago (Q3a)



Base: All respondents excluding outliers = 2 171

Fig. 3.2.5b: Weight increased or decreased by more than 10 pounds when compared with one year ago (Q3b)



Base: Respondents who had a weight difference of more than 10 pounds when compared with one year ago = 336

3.2.6 Perception of current weight status

When respondents were asked their self perceived current weight status, close to half (48.1%) of the respondents perceived it as "just right". However, 42.7% considered themselves as "overweight" while 9.2% considered themselves as "underweight" (Table 3.2.6a).

Table 3.2.6a: Perception of current weight status (Q4)

Perception of current weight	Number	% of Total
Overweight	923	42.7%
Just right	1 040	48.1%
Underweight	200	9.2%
Total	***2 163****	***100.0%***

** All respondents excluding outliers, "don't know" and refusal*

Table 3.2.6b shows the differences of weight status between the WHO (Asian standard) classification and the respondents' perception. Close to half (48.2%) of respondents considered their weight status as "just right", and almost half (49.5%) of respondents were classified as "normal" under the WHO classification (Asian standard). On the other hand, 42.5% of respondents perceived themselves as "overweight" while 40.1% were classified as "overweight" or "obese" according to the WHO criteria (Asian standard). Overall, 66.9% of the respondents perceived their weight status in a way consistent with the WHO criteria, while 18.3% of the respondents overestimated and 14.8% underestimated.

Table 3.2.6b: Comparison of weight status between WHO classification (Asian standard) and respondents' perception of their current weight (Q2a, Q2b & Q4)

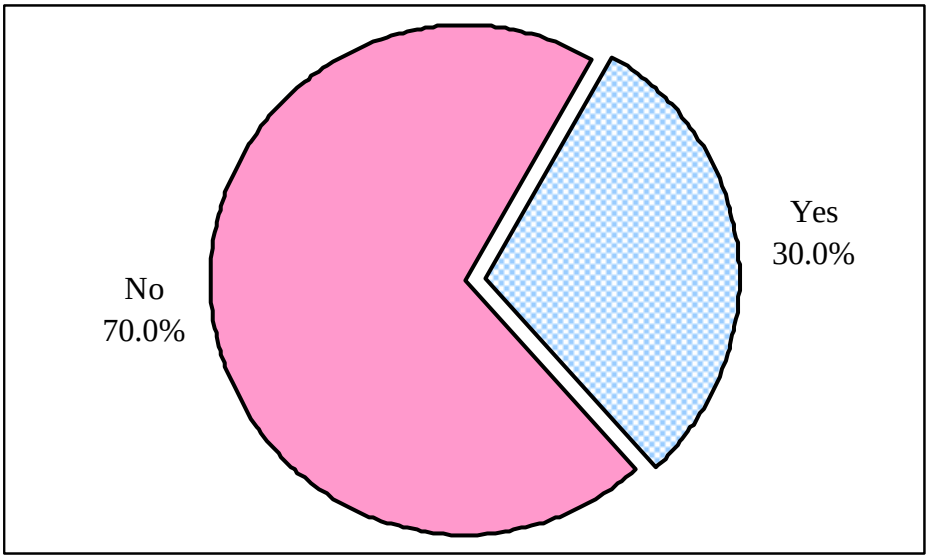
Cross-tabulation		Weight status by WHO classification (Asian standard)				
		Underweight	**Normal**	**Overweight**	**Obese**	***Total***
Respondents' perception of current weight	**Overweight**	9	255	231	399	**895**
	% of Total	0.5%	12.1%	11.0%	19.0%	**42.5%**
	Just right	120	688	134	72	**1 015**
	% of Total	5.7%	32.7%	6.4%	3.4%	**48.2%**
	Underweight	89	99	3	4	**194**
	% of Total	4.2%	4.7%	0.1%	0.2%	**9.2%**
	Total	**218**	**1 042**	**369**	**474**	**2 103**
	% of Total	**10.4%**	**49.5%**	**17.5%**	**22.6%**	**100.0%**

**All respondents excluding refusal, outliers and missing responses either in the questions of perception about current weight or the weight status by WHO classification. The percentages of respondents' perception of current weight are slightly different from Table 3.2.6a since the bases are different.*

3.2.7 Weight control

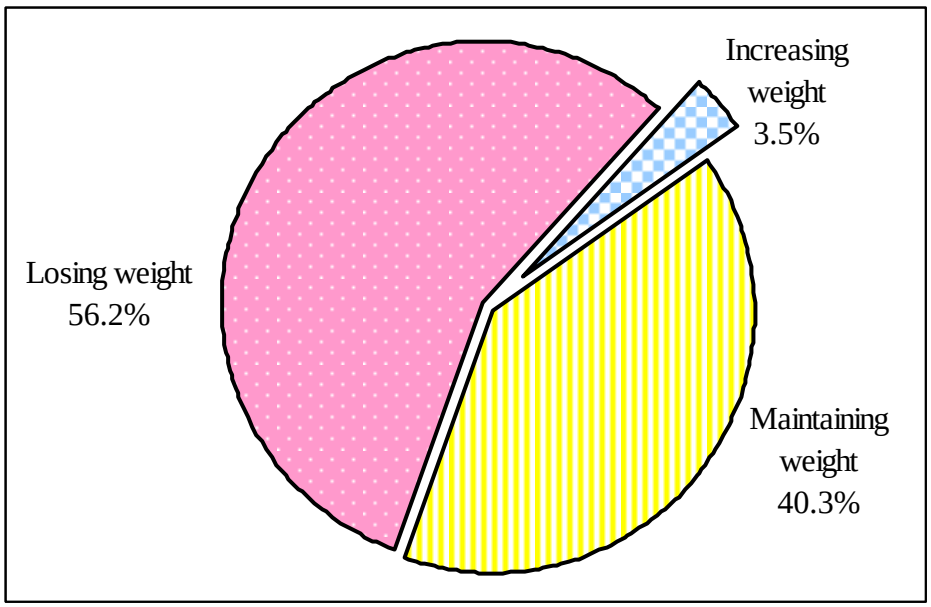
During the twelve months prior to the survey, three-tenths (30.0%) of the respondents had done something deliberately to control their weight (Fig. 3.2.7a). Among those respondents who had done something deliberately to control weight, more than half (56.2%) of them aimed to lose weight, 40.3% aimed to maintain weight and 3.5% reported that they tried to increase weight (Fig. 3.2.7b).

Fig. 3.2.7a: Controlling weight deliberately in twelve months prior to the survey (Q5a)



Base: All respondents excluding outliers = 2 171

Fig. 3.2.7b: Purpose of controlling weight (Q5b)

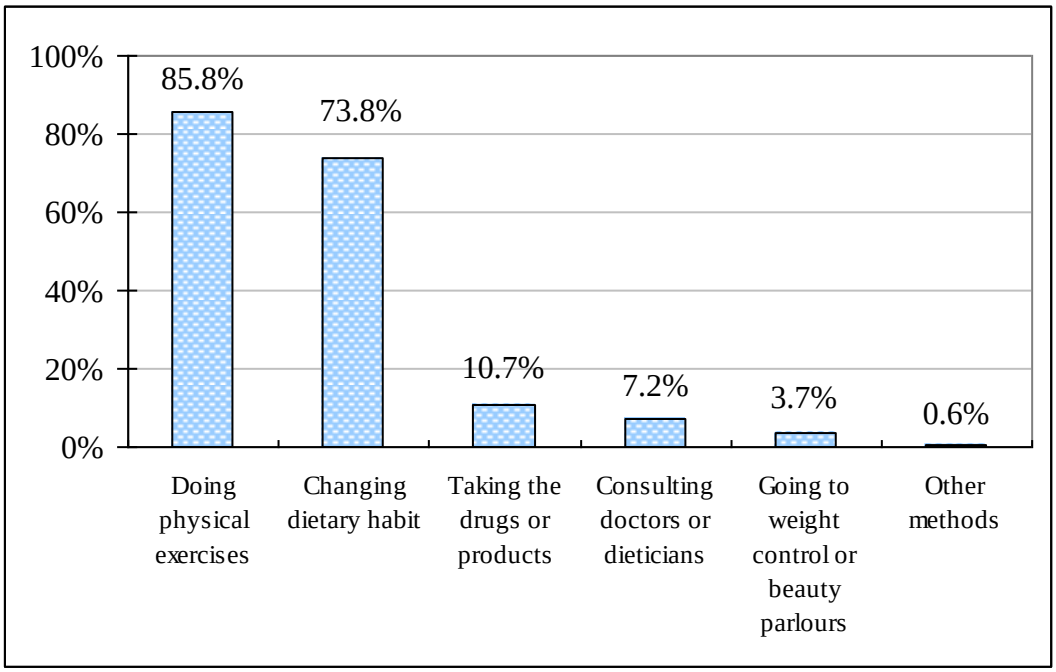


Base: Respondents who had deliberately done something to control their weight and excluding outliers = 652

3.2.8 Methods adopted to control weight

Among those respondents who had done something deliberately to control their weight during the twelve months prior to the survey, most of them reported that the methods they used were "doing physical exercises" (85.8%) and "changing dietary habit" (73.8%). Other methods mentioned by respondents included "taking drugs or products" (10.7%), "consulting doctors or dieticians" (7.2%) and "going to weight control or beauty parlours" (3.7%) (Fig. 3.2.8).

Fig. 3.2.8: Methods used to control weight (Q6a-f)



Base: Respondents who had deliberately done something to control their weight and excluding outliers = 652 (multiple responses)

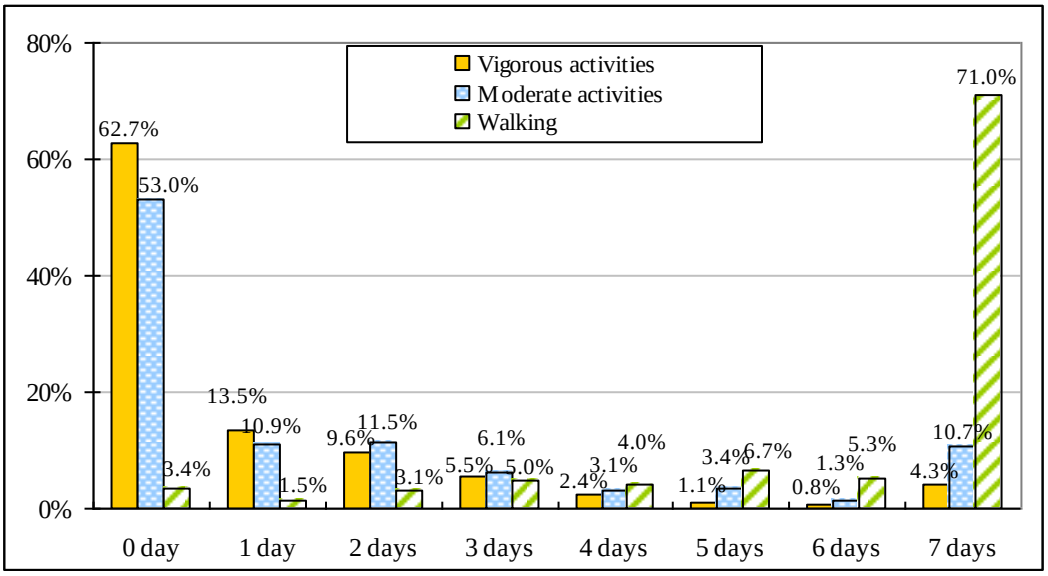
3.3 Physical activities and leisure-time exercises

Nine questions were asked to understand the frequency and duration with which respondents engaged in physical activities[9] and seven of which were adopted from the International Physical Activity Questionnaire (IPAQ) short form (see Annex A, Q7a-Q11).

3.3.1 Frequency of physical activities per week

On a weekly basis, walking was far more prevalent than vigorous and moderate physical activities. During the seven days prior to the survey, 71.0% of respondents spent at least 10 minutes walking every day. On the other hand, 37.3% and 47.0% of the respondents reported that they spent at least one day on vigorous and moderate physical activities in the seven days prior to the survey respectively (Fig. 3.3.1a).

Fig. 3.3.1a: Number of days per week spent on doing each type of physical activities in the seven days prior to the survey (Q7a, 8a & 10a)

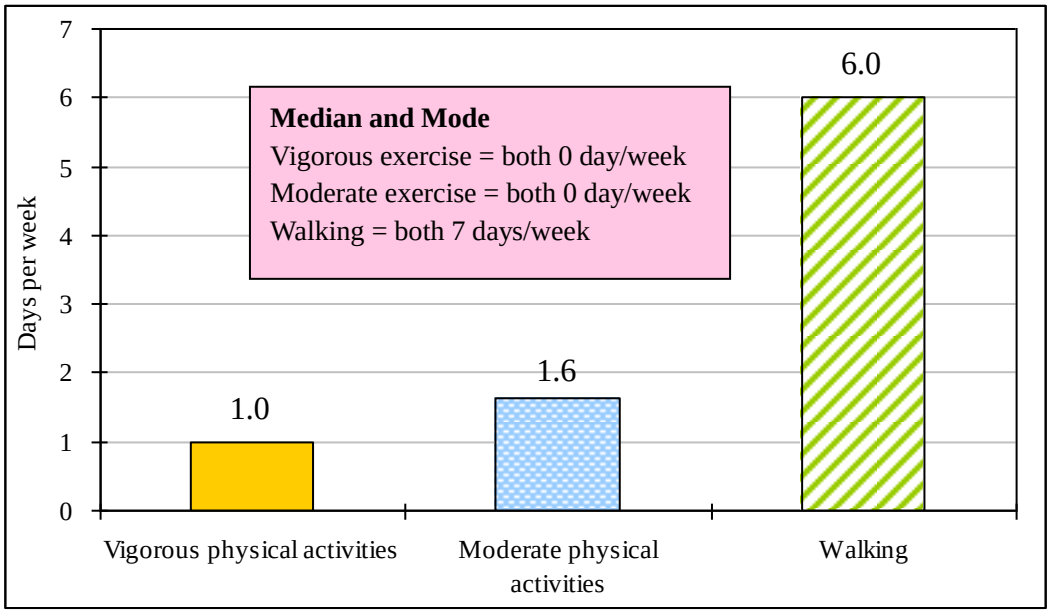


Base: All respondents excluding "don't know" (vigorous activities = 2 185; Moderate activities = 2 184; Walking = 2 185)

[9] Respondents were informed of the definitions of vigorous physical activities, moderate physical activities and walking. Vigorous physical activities are defined as those that make people breathe much harder than normal, for example aerobics, football, swimming, heavy physical work and jogging. Moderate physical activities are defined as those that make people breathe somewhat harder than normal, for example cycling, washing cars or polishing, fast walking and cleaning windows. Walking includes walking to work or school, walking to travel from place to place and walking for leisure. All the questions about vigorous exercise, moderate exercise and walking only referred to those activities on which the respondents had spent at least 10 minutes at a time.

Fig.3.3.1b shows that respondents spent less time on vigorous and moderate physical activities. On average, respondents spent 1.0 day per week on vigorous physical activities and 1.6 days per week on moderate physical activities. In contrast, the average number of days spent on walking was much higher at 6.0 days per week (Fig. 3.3.1b).

Fig. 3.3.1b: Weekly average number of days spent on different types of physical activities with median and mode (Q7a, 8a & 10a)



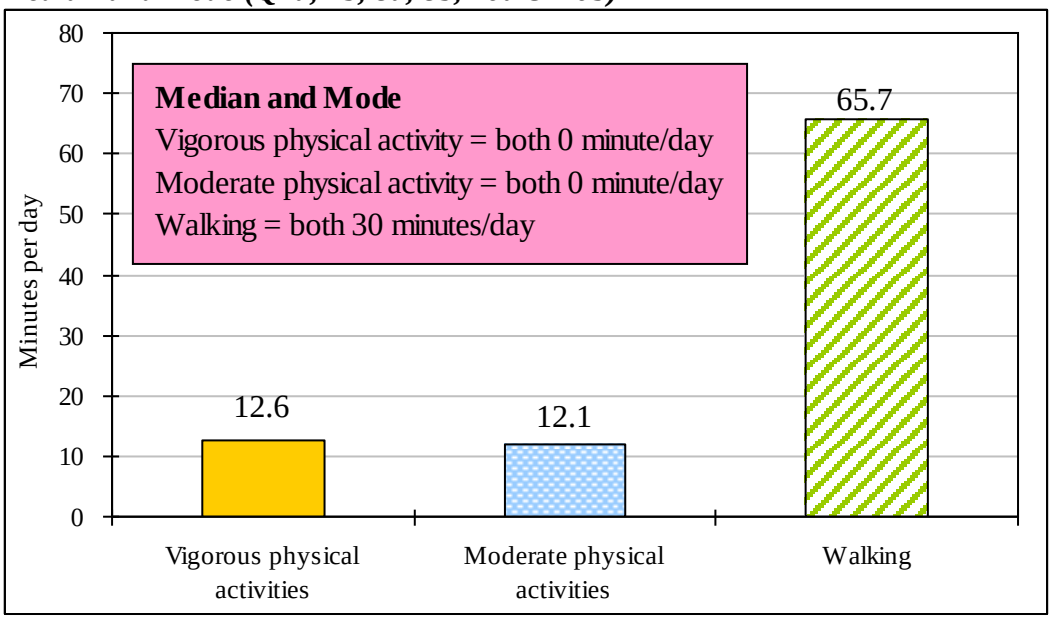
Base: All respondents excluding "don't know" (vigorous activities = 2 185; Moderate activities = 2 184; Walking = 2 185)

3.3.2 Daily average time spent on physical activities[10]

On average, respondents spent 12.6 minutes per day on vigorous physical activities, 12.1 minutes on moderate physical activities and 65.7 minutes on walking. The median and mode average time spent per day were both zero minutes for vigorous and moderate physical activities and both median and mode time spent per day were 30 minutes for walking (Fig. 3.3.2a).

Overall, less than one-tenth of the respondents spent a daily average of 31 minutes or more on vigorous physical activities (8.3%) and moderate physical activities (8.7%), while 43.6% of respondents spent a daily average of 31 minutes or more on walking (Table 3.3.2b).

Fig 3.3.2a: Daily average minutes spent on different types of physical activity with median and mode (Q7a, 7b, 8a, 8b, 10a & 10b)



Base: All respondents excluding "don't know" (Vigorous exercise = 2 185; Moderate exercise = 2 181; Walking = 2 171)

[10] The daily average minutes per day spent on each type of exercise was computed by multiplying the average number of days engaged in each type of exercise on a weekly basis and the average minutes of time spent on each type of exercise on those days they had done exercise and then dividing by 7 days. Vigorous exercise: (Q7a*Q7b)/7; Moderate exercise: (Q8a*Q8b)/7; Walking: (Q10a*Q10b)/7.

Table 3.3.2b: Daily average time spent on doing different types of physical activity (Q7a, 7b, 8a, 8b, 10a & 10b)

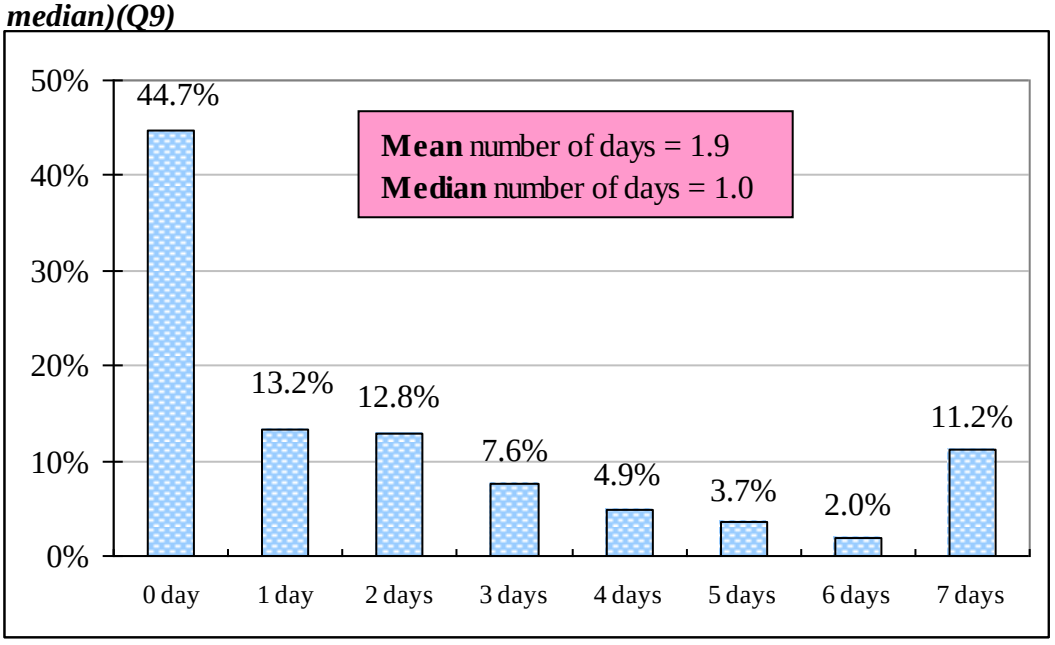
Minutes	Vigorous physical activity		Moderate physical activity		Walking	
	Number	% of Total	Number	% of Total	Number	% of Total
Below 10	1705	78.1%	1612	73.9%	226	10.4%
10 – <16	94	4.3%	154	7.1%	239	11.0%
16 – <31	204	9.3%	225	10.3%	760	35.0%
31 – <61	108	4.9%	116	5.3%	482	22.2%
61 or above	73	3.4%	73	3.4%	463	21.3%
Total	***2 185****	***100.0%***	***2 181****	***100.0%***	***2 171****	***100.0%***

**All respondents excluding "don't know"*

3.3.3 Physical activities with moderate or vigorous intensity

Respondents were asked the number of days per week having moderate physical activities for at least 30 minutes or vigorous physical activities for at least 20 minutes during the seven days prior to the survey. Overall, over two-fifths (44.7%) did not spend any time on such activities while 16.9% had physical activities for 5 or more days during the seven days prior to the survey. The mean and median number of days spent on these activities was 1.9 days and 1.0 day respectively (Fig 3.3.3).

Fig 3.3.3: Number of days having moderate physical activities for at least 30 minutes, or vigorous physical activities for at least 20 minutes (Percentage, mean and median)(Q9)



**All respondents excluding "don't know" = 2 184*

3.3.4 Sitting[11]

Respondents were asked how much time per day on average they spent on sitting during weekdays (Monday to Friday) in the seven days prior to the survey. Table 3.3.4 shows that more than half (56.0%) of the respondents reported that they sat for at least six hours per day during weekdays. The mean and median sitting hours were 6.5 and 6.0 respectively (Table 3.3.4).

Table 3.3.4: Average time spent on sitting per day during weekdays in the seven days prior to the survey (Percentage, mean and median) (Q11)

Sitting Hours	Number	% of Total
Below 2	92	4.3%
2 - <4	378	17.7%
4 - <6	469	22.0%
6 - <8	358	16.8%
8 - <10	344	16.1%
10 or above	492	23.0%
Total	***2 134****	***100.0%***
Other statistics	**Hours**	
Mean	6.5	
Median	6.0	

**All respondents excluding "don't know" and outliers*

[11] Sitting includes time spent sitting at work, at home, visiting friends, reading, travelling on public transport and lying down to watch television.

3.3.5 Analysis of the International Physical Activity Questionnaire

The analysis in this section is based on the guidelines for data processing and analysis of the International Physical Activity Questionnaire (IPAQ) – Short Form (revised November 2005)[12]. The age range of respondents of this survey (18-64) is within the age criteria of the IPAQ analysis, i.e., 15-69. The analysis of the IPAQ short form provides two indicators of physical activity, namely categorical and continuous indicators.

According to the IPAQ data processing and cleaning rules, 29 cases were excluded from this part of analyses for being classified as outliers or "don't know".

3.3.5.1 Categorical scoring

The categorical score comprises three levels of physical activity, namely "low", "moderate" and "high"[13]. Table 3.3.5.1a details the criteria of classification.

Table 3.3.5.1a: Categorical scoring classification of physical activity

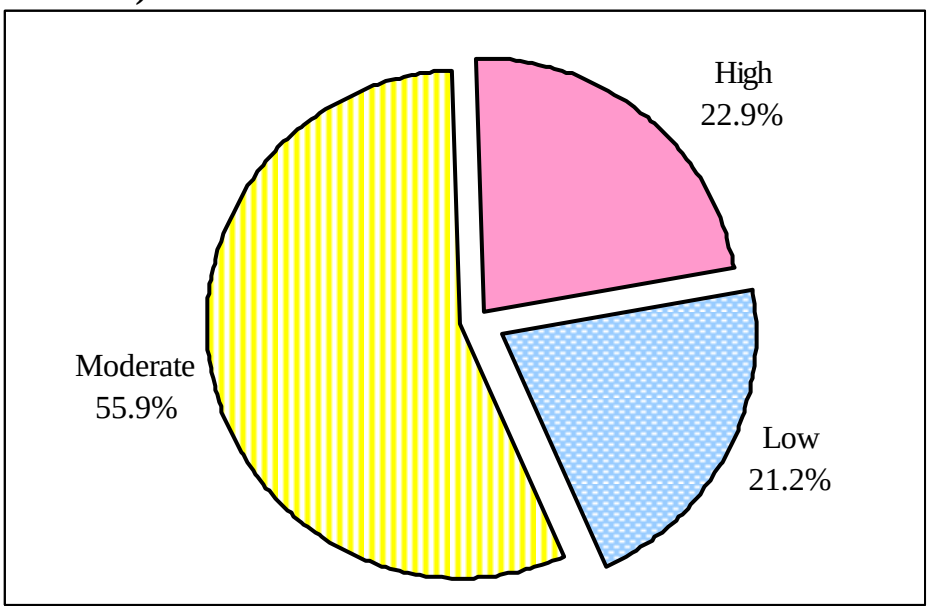
Level of physical activity	Categorical scoring classification criteria
Low	▪ No activity is reported OR ▪ Some activity is reported but not enough to meet categories "Moderate" or "High"
Moderate	Any one of the following 3 criteria ▪ 3 or more days of vigorous-intensity activity of at least 20 minutes per day OR ▪ 5 or more days of moderate-intensity activity or walking of at least 30 minutes per day OR ▪ 5 or more days of any combination of walking, moderate-intensity or vigorous-intensity activities achieving a minimum of at least 600 MET-min/week
High	Any one of the following 2 criteria ▪ Vigorous-intensity activity on at least 3 days and accumulating at least 1500 MET-minutes/week OR ▪ 7 or more days of any combination of walking, moderate-intensity or vigorous-intensity activities achieving a minimum of at least 3000 MET-minutes/week

Note: MET = multiples of resting metabolic rate
Source: Guidelines for data processing and analysis of the IPAQ – short form

[12] This document for data processing and analysis of the IPAQ is available on the website: http://www.ipaq.ki.se.
[13] The current categories of IPAQ classification are "Low", "Moderate" and "High". The previous categories were known as "Inactive", "Minimally active" and "HEPA active".

According to the classification criteria listed in Table 3.3.5.1a, more than half (55.9%) of the respondents were classified as having "moderate" level of physical activity. In addition, the proportions of respondents having "high" and "low" level of physical activity were 22.9% and 21.2% respectively (Fig. 3.3.5.1b).

Fig. 3.3.5.1b: Classification of respondents' physical activity level (Q7a, 7b, 8a, 8b, 10a & 10b)



Base: All respondents excluding "don't know" and outliers according to the data processing rules of the IPAQ analysis guidelines = 2 161

3.3.5.2 Continuous scoring

Continuous scoring is another measurement of physical activity suggested in the IPAQ - short form guidelines. This is achieved by weighting each type of activity by its energy requirements defined in METs (METs are multiples of the resting metabolic rate) to yield a score in MET-minutes. A MET-minute score[14] is computed by multiplying the MET by the minutes performed. MET-minute scores are equivalent to kilocalories for a 60 kilogram person. Kilocalories can be computed from MET-minutes using the following equation: MET-minute x (weight in kilograms/60 kilograms). The selected MET values were derived from work undertaken during the IPAQ Reliability Study conducted in 2000-2001. This study yielded MET values for the three types of activity, namely "walking"= 3.3 METs, "moderate physical activity" = 4.0 METs and "vigorous physical activity" = 8.0 METs. These MET values are used for the continuous scoring analysis of IPAQ data in this part.

More specifically, the continuous score for each type of physical activity was computed according to the formula and examples in Table 3.3.5.2a.

[14] Source of information: Guideline for data processing and analysis of the IPAQ

Table 3.3.5.2a: Continuous score computation

MET-min per week for each activity	= (MET level) x (min of activity) x (events per week)
Total MET-min per week	= (Walk METs x min x days) + (Moderate PA METs x min x days) + (Vigorous PA METs x min x days)
Example:	***Given:*** *MET-min/week for 30 min episodes, 5 times/week, MET levels for walking = 3.3METs, Moderate PA= 4.0METs and Vigorous PA= 8.0METs*
MET-min/week for walking	= 3.3 x 30 x 5 = 495 MET-min/week
MET-min/week for Moderate PA	= 4.0 x 30 x 5 = 600 MET-min/week
MET-min/week for Vigorous PA	= 8.0 x 30 x 5 = 1,200 MET-min/week
Total MET-min/week	Total = 2 295 MET-min/week

Note: PA = physical activity
Source: Guidelines for data processing and analysis of the IPAQ – short form

As suggested by the IPAQ – short form guidelines, the continuous indicator is presented as median minutes or median MET-minutes rather than mean minutes or mean MET-minutes given the non-normal distribution of energy expenditure in many populations. However, median scores (unlike mean scores) are not additive, so the median score is not the sum of the median scores for each type of physical activity.

Table 3.3.5.2b shows the medians of the continuous scores for each type of physical activities. The medians for vigorous physical activity and moderate activity were both 0 while the median for walking was 693 MET-minutes per week. The median score of these three activities combined was 1 386 MET-minutes per week.

Table 3.3.5.2b: Medians of the IPAQ continuous score for each type of physical activity level (Q7a, 7b, 8a, 8b, 10a & 10b)

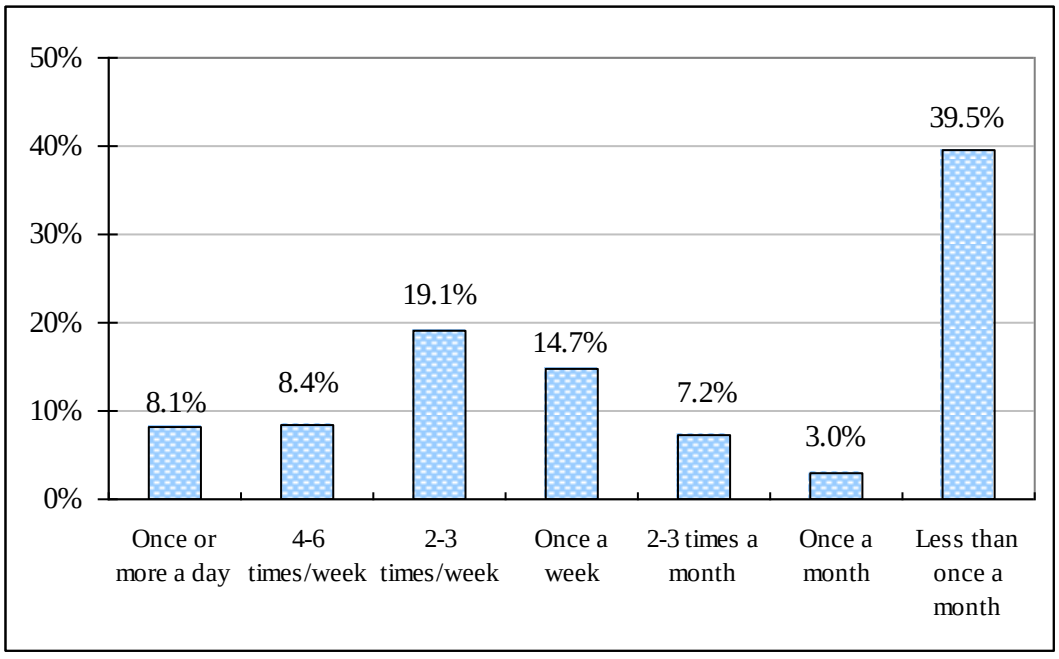
Statistics	Continuous Score (MET-minutes/week)			
	Vigorous exercise	Moderate exercise	Walking	**Total**
Median	0	0	693	1 386

**All respondents excluding "don't know" and outliers according to the data processing rules of the IPAQ analysis guideline (Vigorous exercise = 2 185; Moderate exercise = 2 181; Walking = 2 171)*

3.3.6 Frequency of having exercise in leisure-time[15]

Respondents were asked how often they would exercise in their leisure-time during the thirty days prior to the survey. Overall, about two-fifths (39.5%) of the respondents reported that they exercised less than once a month in their leisure-time. On the other hand, 16.5% of respondents reported that they exercised 4 times or more a week and 33.8% exercised 1 to 3 times a week in their leisure-time (Fig. 3.3.6).

Fig. 3.3.6: Frequency of having exercise in leisure-time during the thirty days prior to the survey (Q12)



Base: All respondents excluding "don't know" = 2 170

[15] Exercise is defined as activities that make people breathe somewhat harder than normal and sweat.

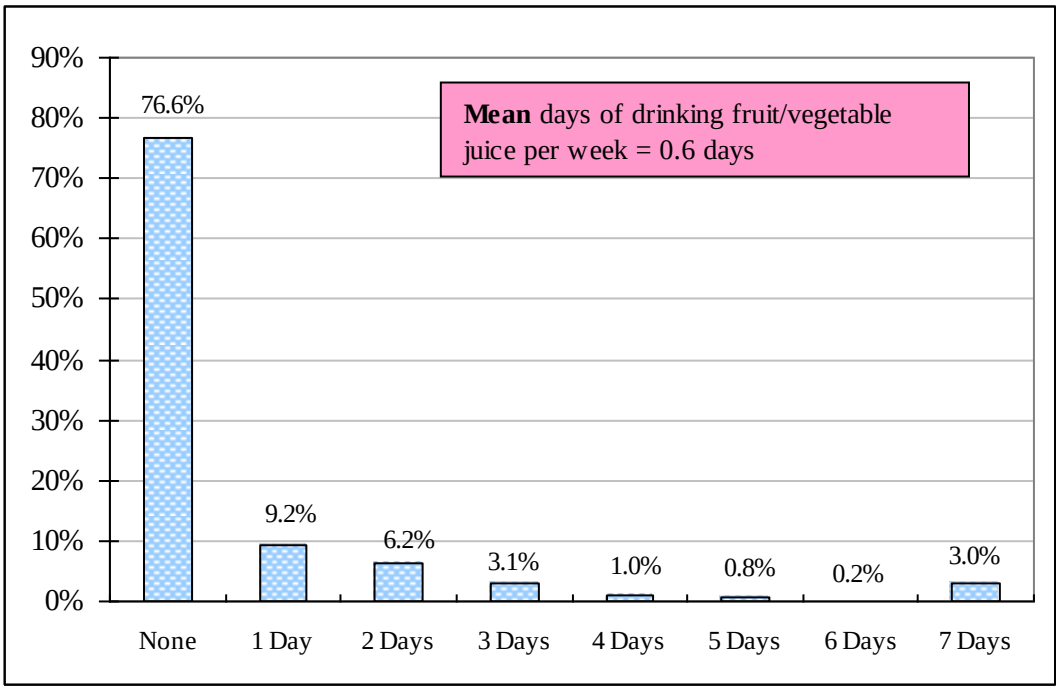
3.4 Fruit and vegetable consumption

Five questions were asked in this section to gauge respondents' fruit and vegetable consumption.

3.4.1 Frequency of consuming fruit or vegetable juice per week[16]

Overall, only 3.0% of the respondents drank fruit or vegetable juice on a daily basis. The average number of days per week in which the respondents drank fruit or vegetable juice was 0.6 day (Fig 3.4.1).

Fig. 3.4.1: Number of days in the week when respondents drank fruit/vegetable juice (Q15)



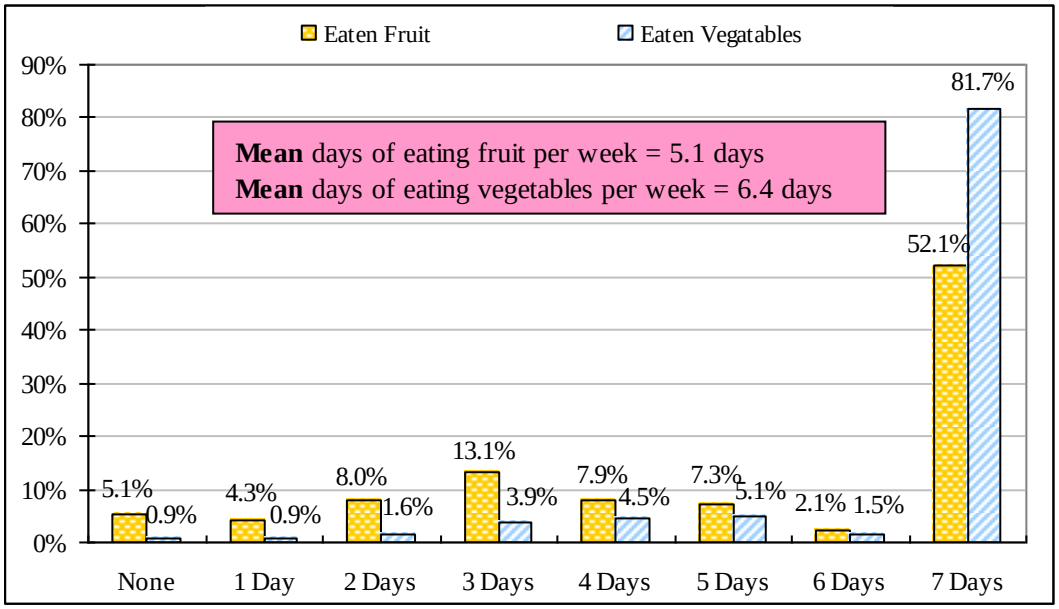
Base: All respondents excluding "don't know" = 2 183

3.4.2 Frequency of consuming fruit and vegetables per week

On a daily basis, more respondents consumed vegetables than fruit. Fig. 3.4.2 shows that more than four-fifths (81.7%) of the respondents had consumed vegetables every day while more than half of the respondents (52.1%) had eaten fruit on a daily basis. On average, the number of days per week that respondents consumed vegetables (6.4 days per week) was higher than that for consuming fruit (5.1 days per week) (Fig. 3.4.2).

[16] Fruit/vegetable juice refers to freshly squeezed juice or those labelled 100% or pure fruit/vegetable juice.

Fig. 3.4.2: Number of days in the week when respondents ate fruit and vegetables (Q13a & Q14a)



Base: All respondents excluding "don't know" (Eating fruit = 2 181; Eating vegetables =2 185)

3.4.3 Amount of fruit and vegetables eaten per day[17]

On average, 45.7% and 30.3% of respondents consumed less than one fruit daily and one bowl of vegetables daily respectively. In addition, about half (49.1%) of the respondents consumed 1-2 fruit on a daily basis and about two-thirds (63.5%) of the respondents ate 1-2 bowls of vegetables every day on average. Overall, the daily average amount consumed was just 1.0 fruit and 1.2 bowls of vegetables (Table 3.4.3).

Table 3.4.3: Daily average amount of fruit and vegetables eaten (Q13a, Q13b, Q14a & Q14b)

Average no. of fruit/bowl of vegetables eaten per day	No. of respondents			
	Fruit		Vegetables	
	Number	% of Total	Number	% of Total
Less than 1	997	45.7%	658	30.3%
1 – 2	1 071	49.1%	1 378	63.5%
More than 2	113	5.2%	135	6.2%
Total	***2 181****	***100.0%***	***2 170****	***100.0%***
Mean	1.0 fruit		1.2 bowls of vegetables	

**Base: All respondents excluding "don't know"*

[17] Respondents were informed that one fruit was a medium sized apple or orange, one banana, two kiwi fruits or plums, or one bowl of small fruit like grapes or strawberries. For vegetables, it is calculated in terms of bowl where one bowl refers to the size of a rice bowl. The average number of fruit eaten per day is calculated by: (the average number of days eating fruit per week x the average number of fruit eaten on those days)/ 7. Similarly, the average number of bowls of vegetables eaten per day is calculated by: (the average number of days eating vegetables per week x the average number of bowls of vegetable eaten on those days) / 7.

3.4.4 The total number of servings of fruit and vegetables consumed per day

The WHO recommends that adults should eat at least five servings of fruit and vegetables per day or a daily intake of at least 400 grams of fruit and vegetables[18].

Total servings excluding fruit or vegetable juice

The number of servings of fruit and vegetables consumed per day was defined in this section as the sum of the average number of fruit eaten per day and twice the average number of bowls of vegetables eaten per day (i.e. one fruit was equated to 1 serving and one bowl of cooked vegetables[19] was equated to 2 servings).

Overall, about one-fifth (20.3%) of the respondents consumed 5 or more servings of fruit and vegetables per day. The mean and median numbers of servings were 3.4 and 3.0 respectively (Table 3.4.4a).

Table 3.4.4a: Number of servings of fruit and vegetables consumed per day excluding juice (Percentage, mean and median) (Q13a, Q13b, Q14a & Q14b)

No. of servings (excluding juice)	**No. of respondents**	
	Number	**% of Total**
Less than 3	962 (0 serving = 6)	44.4% (0 serving = 0.3%)
3 - <5	764	35.3%
5 or above	439	20.3%
Total	***2 166****	***100.0%***
	No. of servings of fruit and vegetables eaten per day	
Mean	3.4 servings	
Median	3.0 servings	

**All respondents excluding "don't know"*

Total servings including fruit or vegetable juice

The total number of servings of fruit and vegetables consumed per day was defined in this section as the sum of the average number of fruit eaten per day and twice the average number of bowls of vegetables eaten per day (i.e. One fruit was equated to 1 serving and 1 bowl of cooked vegetables was equated to 2 servings) and the average number of days per week having drunk one cup or more of fruit or vegetable juice (fruit/vegetable juice only counted as 1 serving, regardless of how many cups of juice were drunk in one day; less than 1 cup a day did not count)[20].

[18] Fruit, vegetables and NCD disease prevention. Geneva: World Health Organization; 2003. (http://www.who.int/dietphysicalactivity/media/en/gsfs_fv.pdf)
[19] 1 bowl of uncooked vegetable was coded as 0.5 bowl of cooked vegetable.
[20] Juice (fruit and vegetable) only counted as 1 serving a day, regardless of how much is drunk because it has very little fibre. It is also likely to lose some vitamins once juiced (particularly vitamin C, which is easily destroyed by light and air).

Overall, 21.0% of the respondents consumed 5 or more servings of fruit and vegetables per day if fruit or vegetable juice was included in calculating the total servings per day. The mean and median numbers of servings were 3.5 and 3.0 respectively (Table 3.4.4b).

Table 3.4.4b: Number of servings of fruit and vegetables consumed per day including juice (Percentage, mean and median) (Q13a, Q13b, Q14a, Q14b & Q15)

No. of servings (including juice)	**No. of respondents**	
	Number	**% of Total**
Less than 3	918 (0 serving = 5)	42.4% (0 serving =0.3%)
3 - <5	790	36.5%
5 or above	455	21.0%
Total	***2 163****	***100.0%***
	No. of servings of fruit and vegetables eaten per day	
Mean	3.5 servings	
Median	3.0 servings	

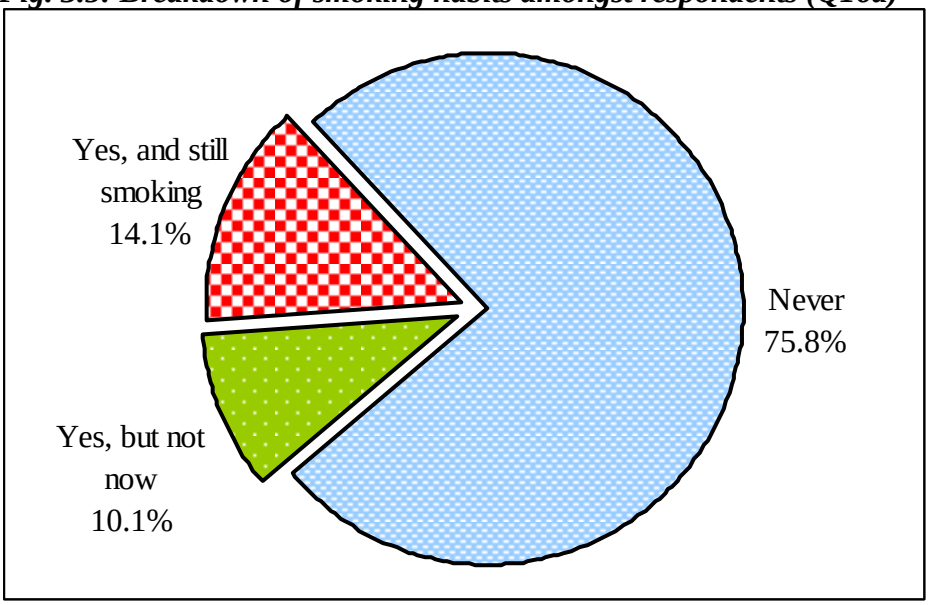
**All respondents excluding "don't know"*

3.5 Smoking habits

In this section, three questions were asked to understand respondents' smoking habits.

About three-quarters of the respondents (75.8%) reported that they had never smoked, 10.1% smoked in the past but now abstained and 14.1% of the respondents were current smokers (Fig. 3.5).

Fig. 3.5: Breakdown of smoking habits amongst respondents (Q16a)

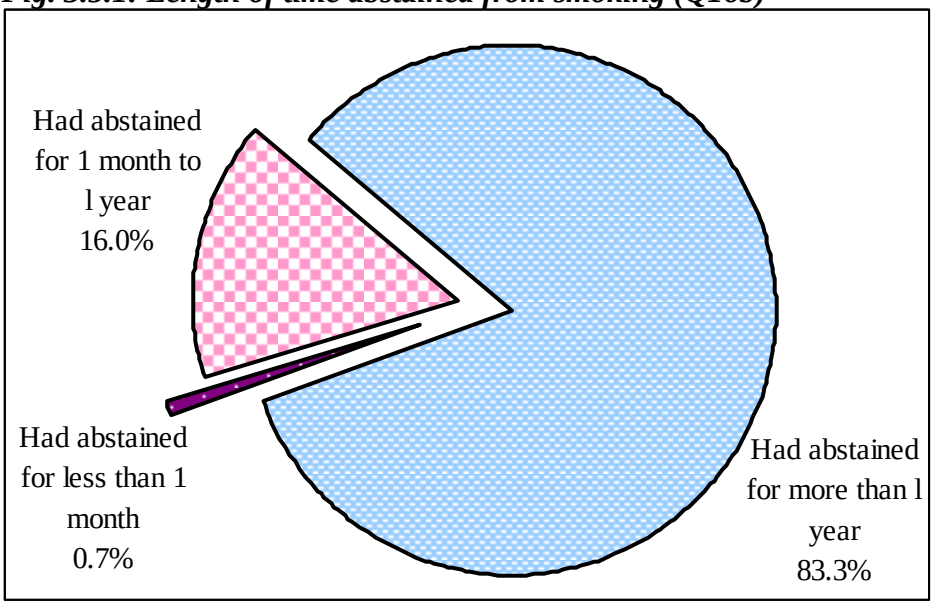


Base: All respondents = 2 185

3.5.1 Abstaining from smoking

Among those who smoked before but now abstained from smoking, most of them (83.3%) reported that they had abstained for more than one year and 16.0% had given up smoking for one month to one year. Only 0.7% of them reported that they had given up smoking for less than one month (Fig 3.5.1).

Fig. 3.5.1: Length of time abstained from smoking (Q16b)

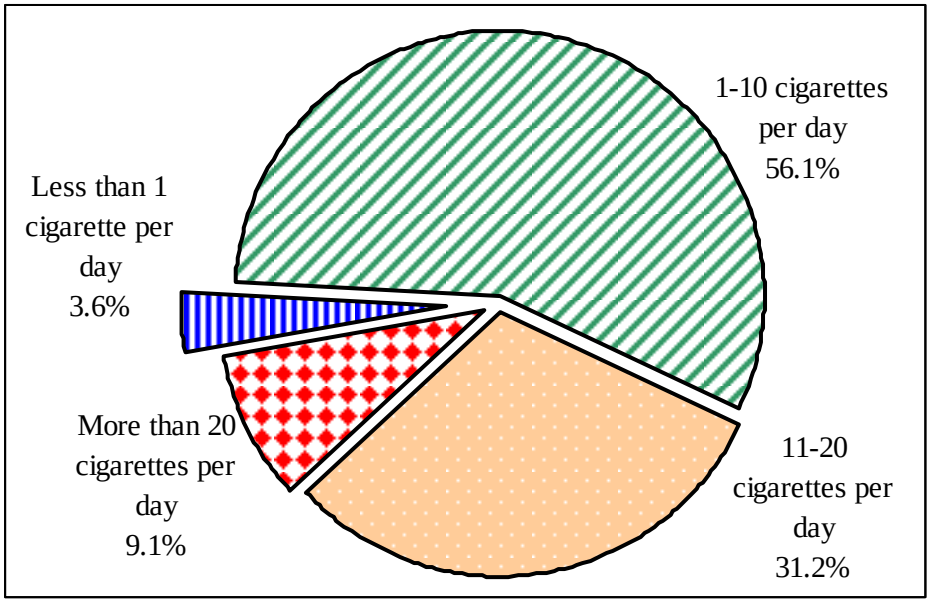


Base: All past smokers excluding refusal = 219

3.5.2 Cigarette consumption

Among the current smokers, the vast majority (96.4%) of them were daily smokers. More than half (56.1%) of the current smokers reported that they smoked 1-10 cigarettes per day and about two-fifths (40.2%) of the current smokers reported that they smoked at least 11 cigarettes a day (Fig. 3.5.2).

Fig. 3.5.2: Number of cigarettes smoked on average per day by current smokers (Q16c)



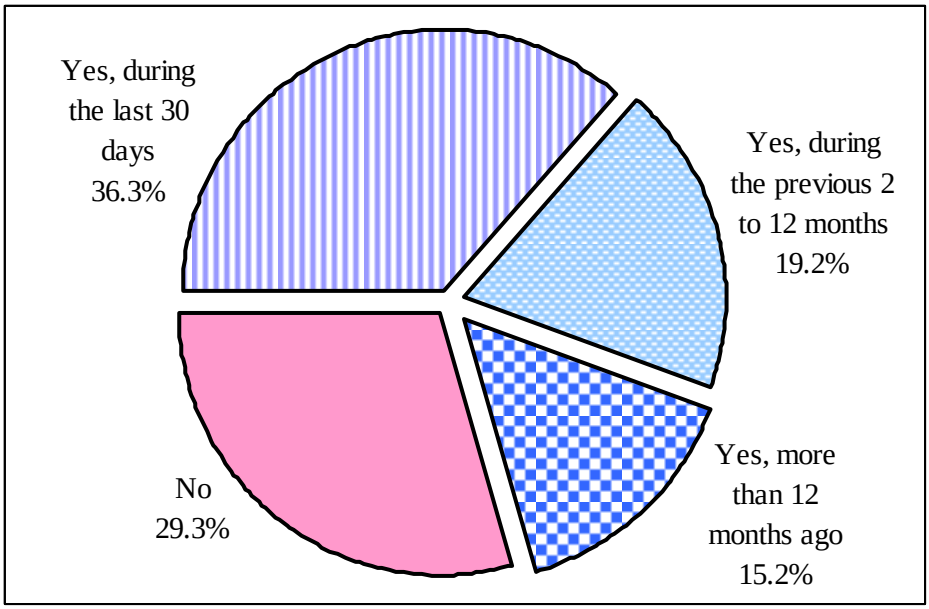
Base: All current smokers excluding "don't know" = 308

3.6 Pattern of alcohol consumption

Seven questions were asked in order to understand respondents' alcohol drinking patterns. Two respondents who reported drinking more than 24 standard drinks per day on average were treated as outliers and were excluded in the analyses from sections 3.6.1 to 3.6.4.

Overall, more than one-third (36.3%) of the respondents reported that they had consumed at least one alcoholic drink during the thirty days prior to the survey. On the other hand, around three-tenths (29.3%) of the respondents reported that they had never drunk alcohol (Fig. 3.6).

Fig. 3.6: Ever had at least one alcoholic drink (Q17a)

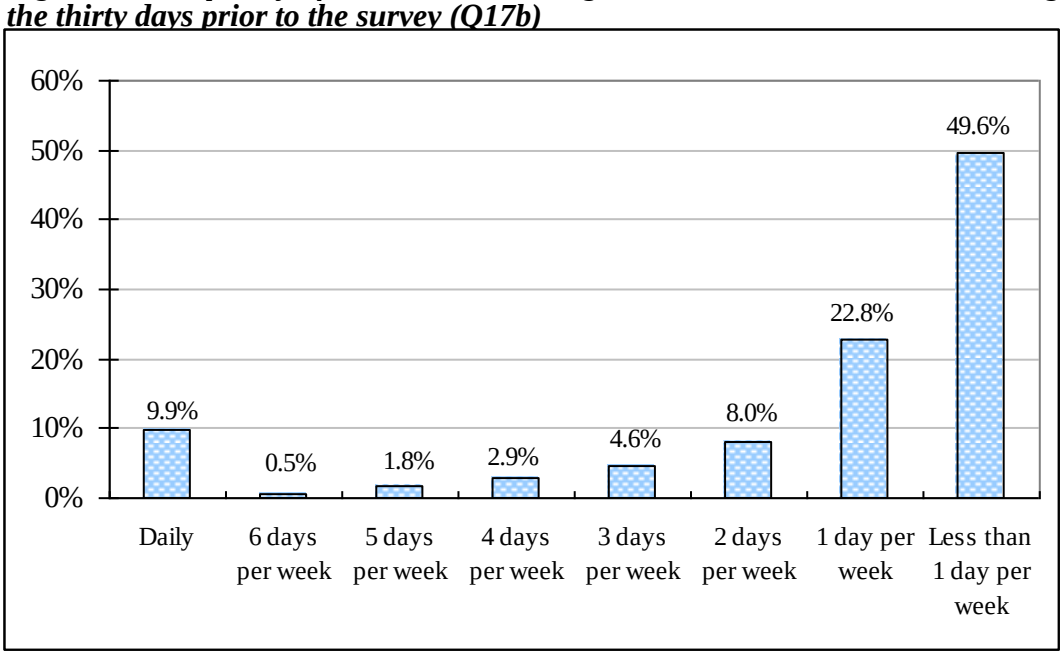


Base: All respondents = 2 185

3.6.1 Frequency of alcohol consumption

Among those respondents who had at least one alcoholic drink during the thirty days prior to the survey, about one-tenth (9.9%) of the drinkers reported that they drank daily. On the other hand, almost half (49.6%) of the drinkers reported that they drank less than 1 day per week (Fig. 3.6.1).

Fig. 3.6.1: Frequency of drinkers consuming at least one alcoholic drink during the thirty days prior to the survey (Q17b)



Base: Respondents who had at least one alcoholic drink during the thirty days prior to the survey excluding outliers and "don't know" = 781

3.6.2 Amount of alcoholic drinks consumed

Among those who drank at least one alcoholic drink during the thirty days prior to the survey, they were further asked the number of standard drinks[21] consumed on each drinking day. More than two-thirds of them (70.8%) consumed less than 3 standard drinks on each drinking day while about one-tenth (10.5%) consumed 5 or more standard drinks. On average, they consumed 2.4 standard drinks on each drinking day and the median was 1.5 standard drinks (Table 3.6.2).

Table 3.6.2: Average number of standard drinks consumed on the days they drank alcohol (Percentage, mean and median) (Q17c)

No. of standard drinks	No. of drinkers	
	Number	% of Total
Less than 3	549	70.8%
3 – <5	145	18.7%
5 or above	81	10.5%
Total	***775****	***100.0%***
Mean	2.4 standard drinks	
Median	1.5 standard drinks	

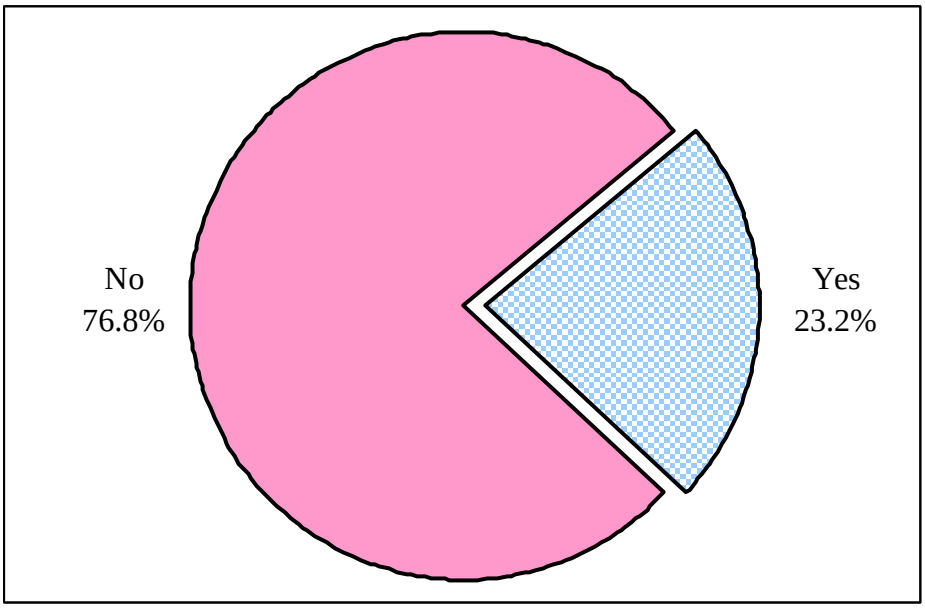
** Respondents who had at least one alcoholic drink during the thirty days prior to the survey excluding outliers and "don't know"*

[21] The amount of drinks consumed was measured using the following standard units: one can or small bottle of beer is equated to 1.5 standard drinks, or one dining glass of wine, or one spirit nip of brandy/whisky, or one small glass of Chinese wine such as rice wine is equated to one standard drink.

3.6.3 Drinking at least 5 glasses/cans of alcohol on one occasion (Binge drinking)

Among those respondents who had at least one alcoholic drink during the thirty days prior to the survey, close to one quarter (23.2%) had consumed at least 5 glasses/cans of alcohol on one single occasion[22] in the thirty days prior to the survey (Fig. 3.6.3a). Among these respondents, more than two-fifths (41.0%) of the respondents had engaged in binge drinking three times or more, about one-fifth (19.6%) had this experience twice and almost two-fifths (39.4%) had this heavy consumption once (Fig. 3.6.3b).

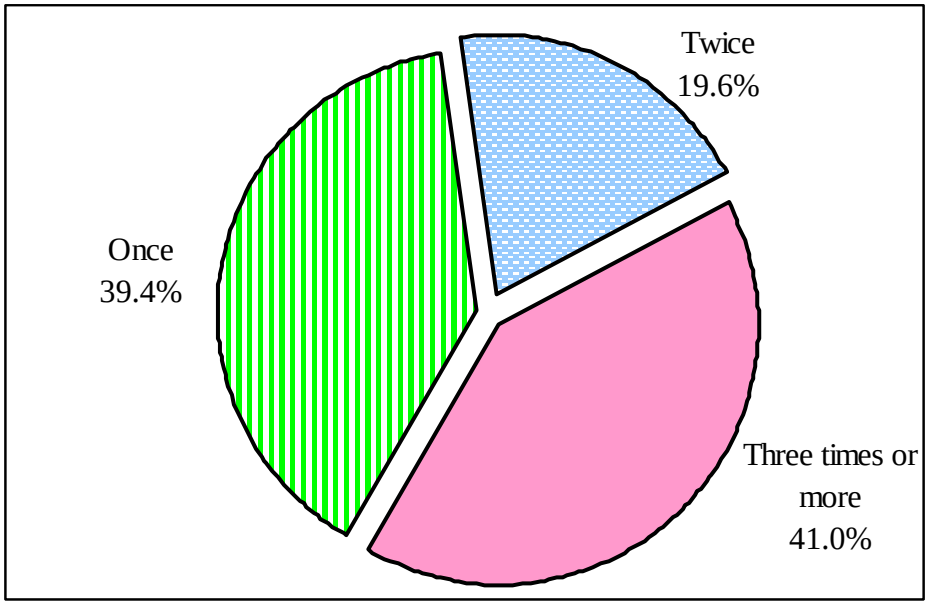
Fig. 3.6.3a: Consumption of at least 5 glasses/cans of alcohol by drinkers on one single occasion during the thirty days prior to the survey (Q17d)



Base: Respondents who had at least one alcoholic drink during the thirty days prior to the survey excluding outliers = 790

[22] Refer to total number of glasses/cans of any types of alcohol. One single occasion means a period of a few hours.

Fig. 3.6.3b: Frequency of consuming at least 5 glasses/cans of alcohol on one single occasion by heavy drinkers during the thirty days prior to the survey (Q17e)

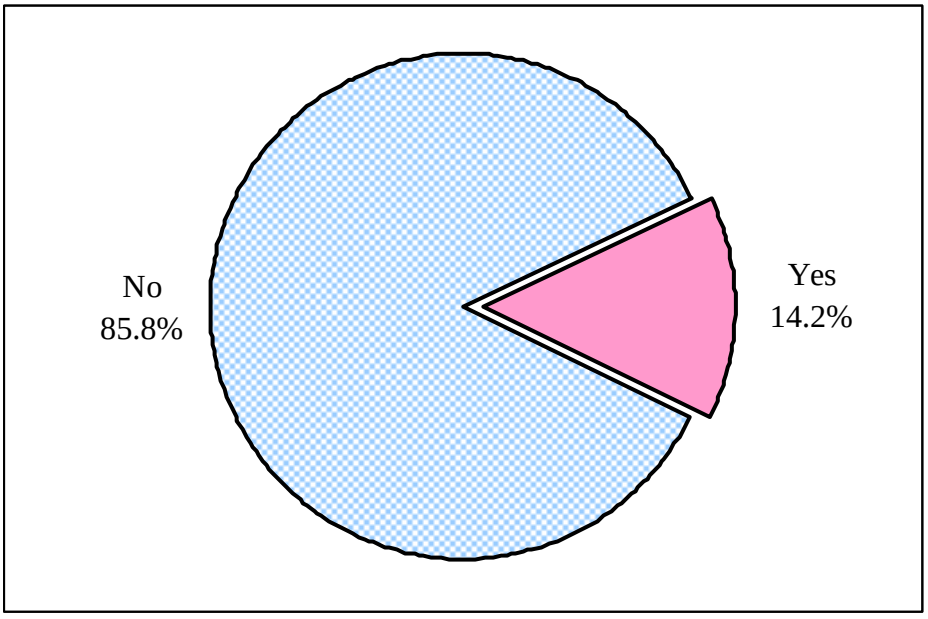


Base: Drinkers who drank at least 5 glasses or cans of alcohol on at least one occasion excluding outliers = 183

3.6.4 Exhibiting signs of drunkenness

Among the respondents who had at least one alcoholic drink during the thirty days prior to the survey, 14.2% reported that they had drunk so much and exhibited signs of drunkenness[23] (Fig 3.6.4a).

Fig. 3.6.4a: Having drunk so much and exhibited signs of drunkenness (Q17f)

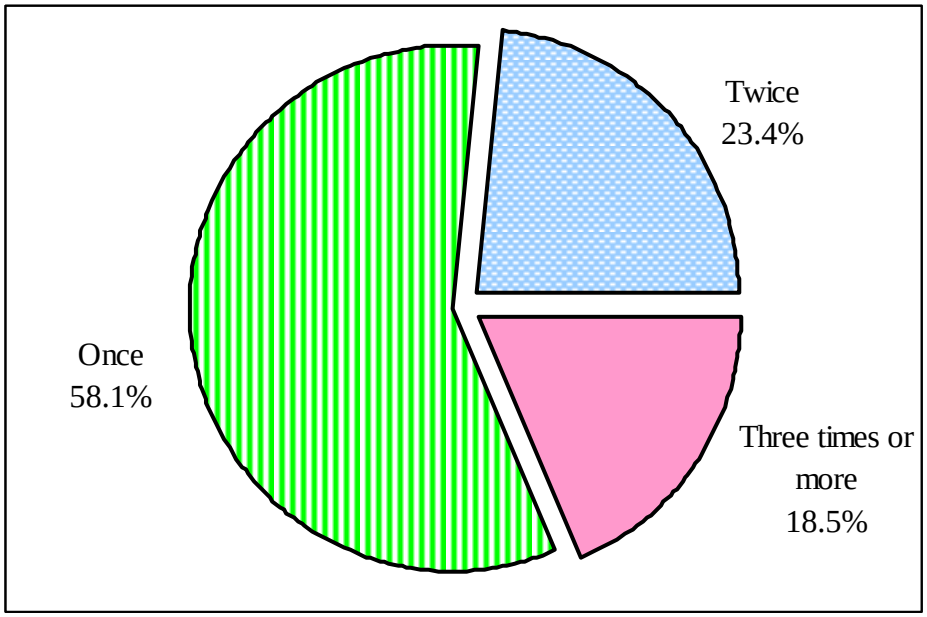


Base: Respondents who had at least one alcoholic drink during the thirty days prior to the survey excluding outliers = 790

[23] Respondents were given examples of signs of drunkenness which include "flushed face or reddened eyes", "slurred or incoherent speech", "unsteady feet or staggering gait", "vomiting" and "hangover".

Among those respondents who had drunk so much and exhibited signs of drunkenness, close to one-fifth (18.5%) of them had this experience three times or more while about four-fifths (81.5%) experienced it once or twice in the thirty days prior to the survey (Fig 3.6.4b).

Fig. 3.6.4b: Frequency of drinking so much and exhibiting signs of drunkenness (Q17g)



Base: Drinkers who had drunk so much and exhibited signs of drunkenness excluding outliers = 112

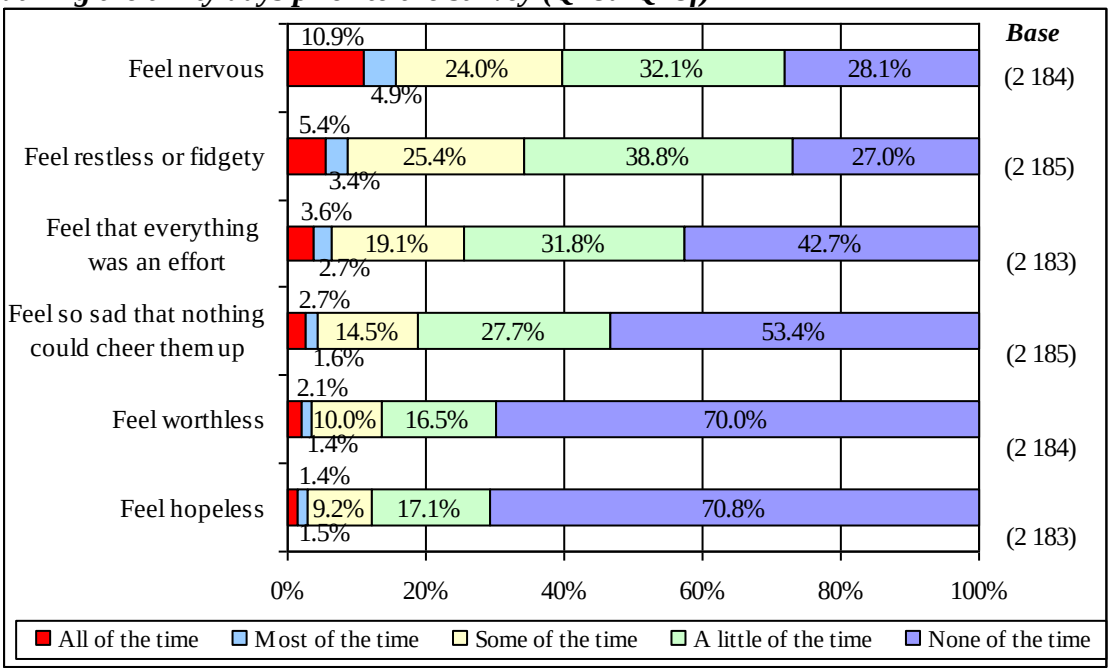
3.7 Level of psychological distress

The questions about psychological distress covered in this survey were adopted from the Kessler 6-items Psychological Distress Scale (K6). The scale asks about symptoms related to feeling of anxiety, restlessness, depression and hopelessness and is scored on the basis of their frequency during the past thirty days (in which "none of the time" is given a score of 0, "all of the time" a score of 4 and the total possible score ranges from 0 to 24). Details about the instrument could be found at the designated website.[24]

3.7.1 Frequency of experiencing six of the psychological distress symptoms

During the thirty days prior to the survey, 15.7% of the respondents felt nervous, 8.8% felt restless or fidgety, 6.3% felt that everything was an effort, 4.4% felt so sad that nothing could cheer them up, 3.5% felt worthless and 2.9% felt hopeless "most" or "all of the time" (Fig. 3.7.1).

Fig. 3.7.1: Frequency of experiencing six of the psychological distress symptoms during the thirty days prior to the survey (Q18a-Q18f)



Base: All respondents excluding "don't know" and refusal

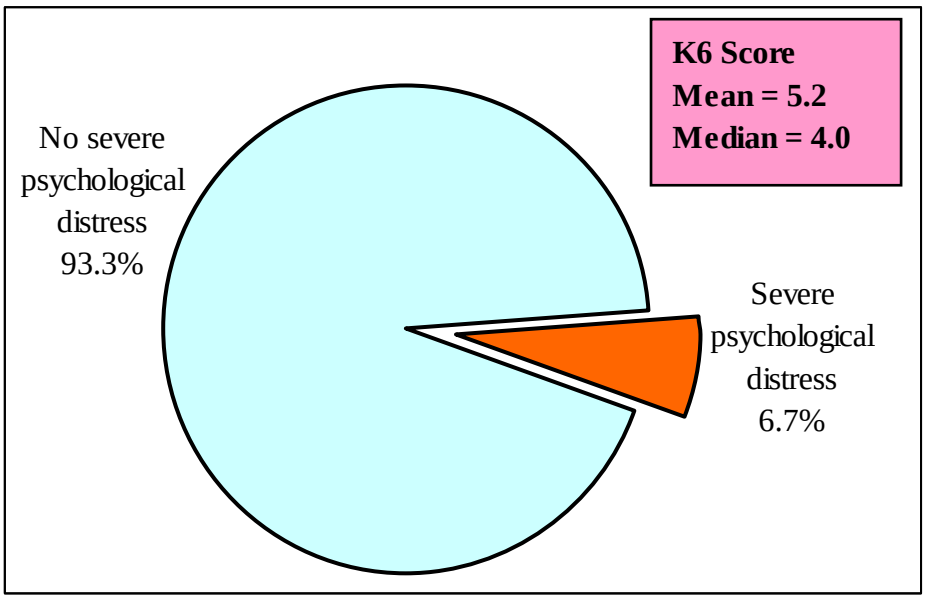
[24] Kessler 6-item Psychological Distress Scale (K6) could be found at http://www.hcp.med.harvard.edu/ncs/k6_scales.php

3.7.2 Measurement of severe psychological distress

As suggested by Kessler and colleagues, a score of 13 or above was used to indicate "severe psychological distress".

Overall, 6.7% of respondents were classified as having severe psychological distress (SPD), with a mean and median K6 score of 5.2 and 4.0 respectively (Fig. 3.7.2).

Fig. 3.7.2: Prevalence of severe psychological distress (Q18a-Q18f)



Base: All respondents excluding "don't know" and refusal = 2 179

3.7.3 Health consultation for psychological distress

Among those respondents who claimed that they had experienced any of the six psychological distress symptoms during the thirty days prior to the survey, 1.9% had seen a doctor or other health professional (at least once) because of these emotional feelings/ problems (Table 3.7.3).

Table 3.7.3: Number of times that respondents saw a doctor or other health professional because of these emotional feelings/ problems during the thirty days prior to the survey (Percentage, mean and median)(Q19)

No. of times	No. of respondents	
	Number	% of Total
None	1 862	98.1%
Once	23	1.2%
More than once	14	0.7%
Total	***1 899****	***100.0%***
Mean	0.03	
Median	0.00	

**All respondents who had experienced any of the six psychological distress symptoms during the thirty days prior to the survey excluding "don't know"*

3.8 Sleeping habits

Respondents were asked how many hours on average they slept per day.

3.8.1 Hours of sleeping

Overall, 89.5% of the respondents slept for at least six hours on average per day. The overall mean and median sleeping hours were both 7.0 hours (Table 3.8.1).

Table 3.8.1: Average number of hours that respondents slept per day (Percentage, mean and median) (Q20)

No. of hours	No. of respondents	
	Number	% of Total
Less than 6 hours	229	10.5%
6-8 hours	1777	81.5%
More than 8 hours	176	8.1%
Total	***2 181****	***100.0%***
Mean	7.0 hours	
Median	7.0 hours	

**All respondents excluding "don't know"*

3.9 Social support

Respondents were asked how many close relatives or friends that they had and could talk to about a private matter, call on for emotional support or financial assistance. Overall, 11.7% of respondents reported that they did not have any close relatives or friends who could provide help for their private, emotional and financial issues. On the other hand, over three-fifths (62.5%) of the respondents had three or more close relatives or friends who could provide support for such a need (Table 3.9).

Table 3.9: Number of close relatives or friends that respondents had that they could talk to about a private matter, call on for emotional support or financial assistance (Percentage, mean and median) (Q21)

No. of close relatives or friends	No. of respondents	
	Number	**% of Total**
None	250	11.7%
1-2	550	25.8%
3-4	615	28.8%
5-6	394	18.4%
7 or more	326	15.3%
Total	***2 135****	***100.0%***
Mean	4.1	
Median	3.0	

**All respondents excluding "no such need", "don't know" and refusal*

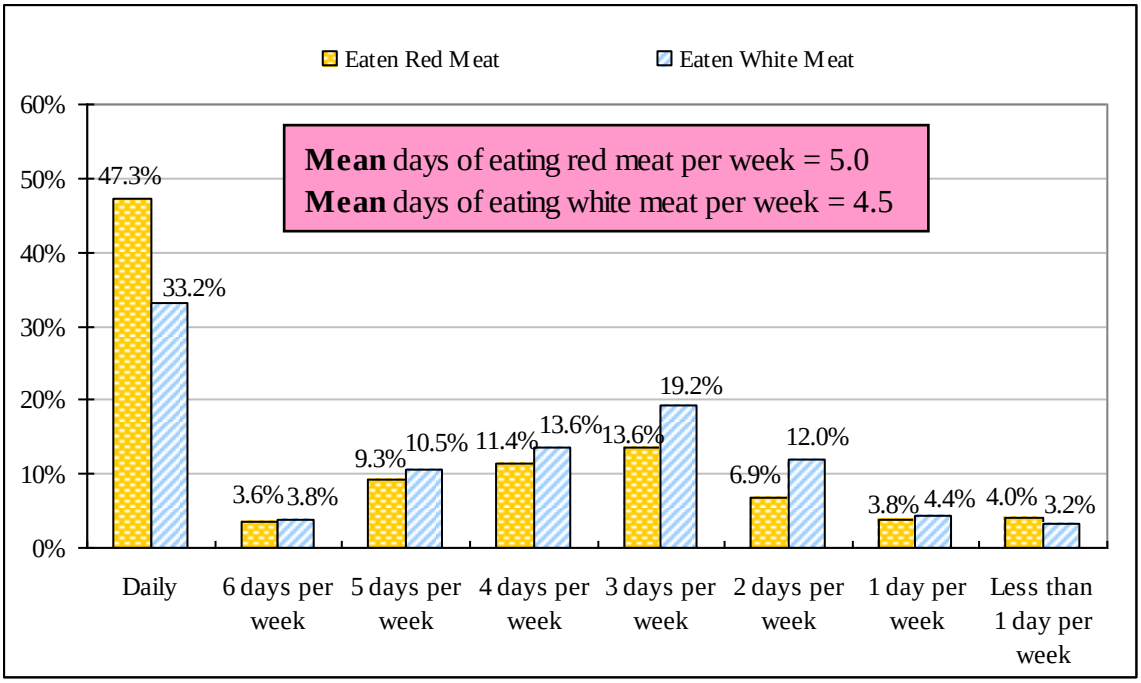
3.10 Meat consumption

In this section, 5 questions were asked to understand respondents' meat consumption pattern during the thirty days prior to the survey.

3.10.1 Frequency of consuming red[25] and white meat[26]

Overall, close to half (47.3%) of the respondents had consumed red meat every day while about one-third (33.2%) of respondents had eaten white meat on a daily basis. The average number of days per week in which the respondents consumed red meat and white meat were 5.0 days and 4.5 days respectively (Fig. 3.10.1).

Fig. 3.10.1 Number of days in the week when respondents ate red and white meat (Q22a & Q23a)



Base: All respondents excluding "don't know" (Eating red meat = 2 180; Eating white meat =2 181)

3.10.2 Amount of red meat and white meat consumed per day[27]

Overall, about two-fifths (42.9%) of the respondents ate less than 2 taels of red meat per day and about half (51.0%) of the respondents ate less than 2 taels of white meat per day. On average, respondents consumed 2.6 taels of red meat and 2.4 taels of white meat per day (Table 3.10.2).

[25] Respondents were given example of red meat: pork, beef and lamb.
[26] Respondents were given example of white meat: poultry and fish.
[27] The average number of taels of red/white meat consumption per day was computed by multiplying the average number of days consuming red/white meat on a weekly basis and the average number of taels of red/white meat consumed on the days they had eaten red/white meat and then dividing by 7 days. Red meat: (Q22a*Q22b)/7; White meat:(Q23a*Q23b)/7 .

Table 3.10.2: Number of taels of red meat and white meat consumed per day (Percentage, mean and median) (Q22a, Q22b, Q23a & Q23b)

No. of taels	Red Meat		White Meat	
	Number	% of Total	Number	% of Total
Less than 2	929	42.9%	1 104	51.0%
2-4	889	41.0%	755	34.9%
More than 4	348	16.1%	305	14.1%
Total	***2 167****	***100.0%***	***2 164****	***100.0%***
Mean	***2.6***		***2.4***	
Median	***2.0***		***1.7***	

**All respondent excluding "don't know"*

3.10.3 Daily average total consumption of red and white meat

In total, over one-quarter (27.6%) of respondents consumed more than 6 taels of red and white meat on average per day (with a mean of 5.0 taels) during the thirty days prior to the survey (Table 3.10.3).

Table 3.10.3: Average daily total consumption of red and white meat per day (Percentage, mean and median) (Q22a, Q22b, Q23a & Q23b)

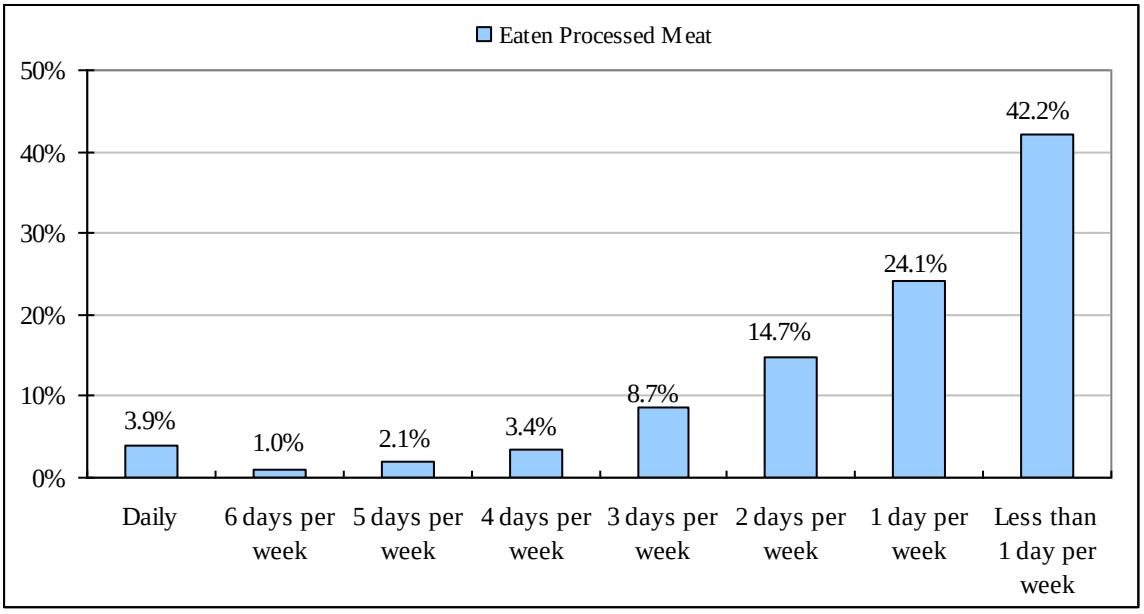
No. of taels	Total amount of meat consumption	
	Number	% of Total
Less than 4	1 021	47.4%
4-6	540	25.0%
More than 6	595	27.6%
Total	***2 155****	***100.0%***
Mean	5.0	
Median	4.0	

**All respondent excluding "don't know"*

3.10.4 Frequency of consuming processed meat[28]

Over two-fifths of respondents (42.2%) had consumed processed meat less than 1 day per week while only 3.9% had eaten processed meat on a daily basis during the thirty days prior to the survey (Fig. 3.10.4).

Fig. 3.10.4 Number of days in the week when respondents ate processed meat (Q24)



Base: All respondents excluding "don't know" = 2 181

[28] Respondents were explained that processed meat included canned meat, cured meat such as luncheon meat, ham, sausages, bacon and Chinese preserved meat.

3.11 Eating habits in relation to fat and oil

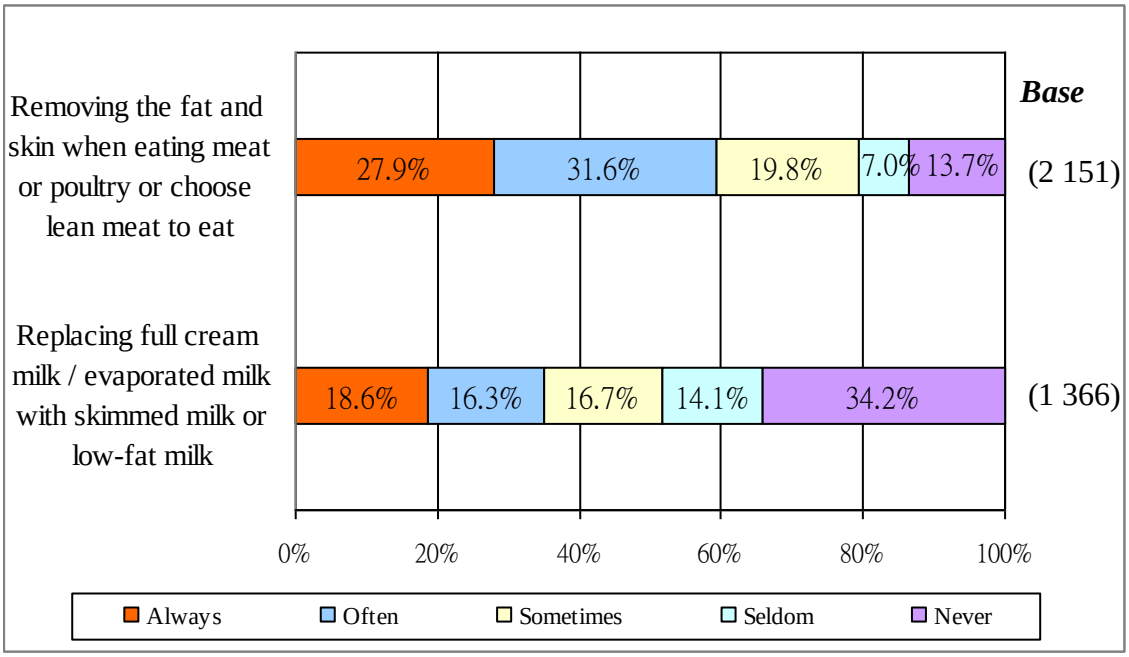
In this section, four questions were asked to understand respondents' dietary habits in relation to fat and oil.

3.11.1 Dietary habit in relation to fat and oil when consuming meat and milk

Almost three-fifths (59.5%) of the respondents had always or often removed fat and skin when eating meat or poultry, or chosen lean meat to eat during the thirty days prior to the survey while 20.7% of respondents never or seldom had this practice (Fig. 3.11.1).

More than one-third (35.0%) of the respondents had always or often chosen to replace full cream milk or evaporated milk with skimmed milk or low-fat milk during the thirty days prior to the survey. On the other hand, nearly half of respondents (48.3%) never or seldom substituted full cream milk or evaporated milk with skimmed milk or low-fat milk during this period (Fig. 3.11.1).

Fig. 3.11.1 Breakdown of dietary habit in relation to fat and oil when consuming meat and milk (Q25 & Q26)



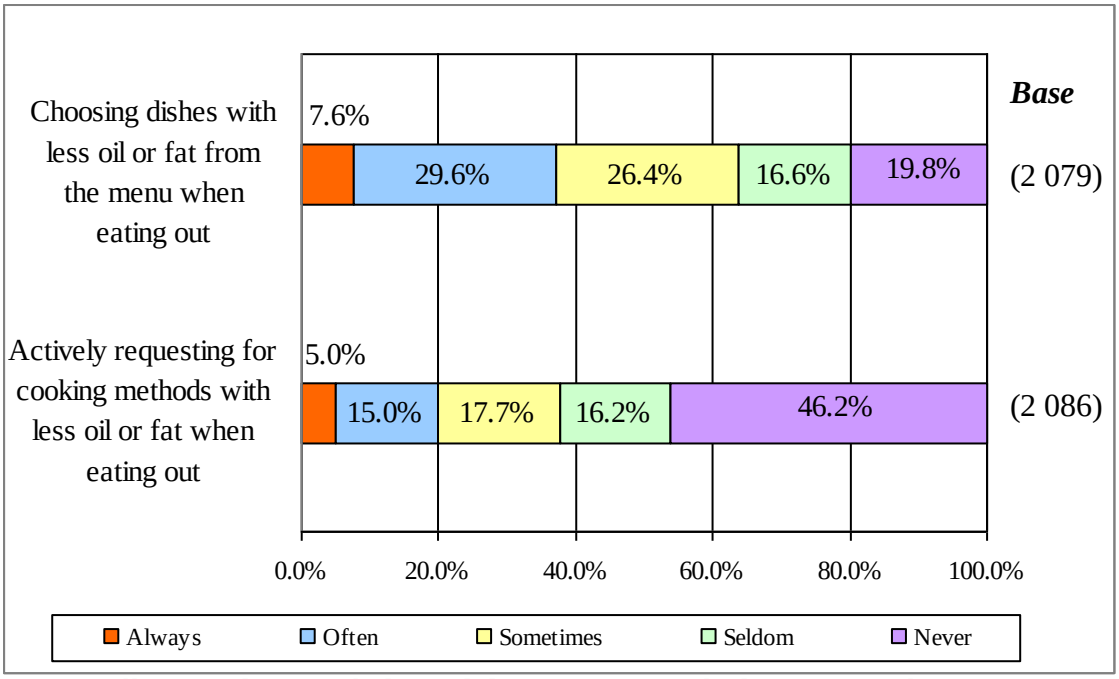
Base: All respondents excluding "did not eat meat or poultry", "did not drink/ consume milk" and "do not remember"

3.11.2 Dietary habit in relation to fat and oil when eating out

Over one-third (37.2%) of respondents had always or often chosen dishes with less oil or fat from the menu during the thirty days prior to the survey when eating out. About the same proportion of respondents (36.4%) never or seldom had this practice during the period (Fig. 3.11.2).

On the other hand, one-fifth (20.0%) of respondents had always or often actively requested for cooking methods with less oil or fat when eating out in the thirty days prior to the survey and over three-fifths (62.3%) never or seldom had this practice during the period (Fig. 3.11.2).

Fig. 3.11.2 Breakdown of dietary habit in relation to fat and oil when eating out (Q27 & Q28)

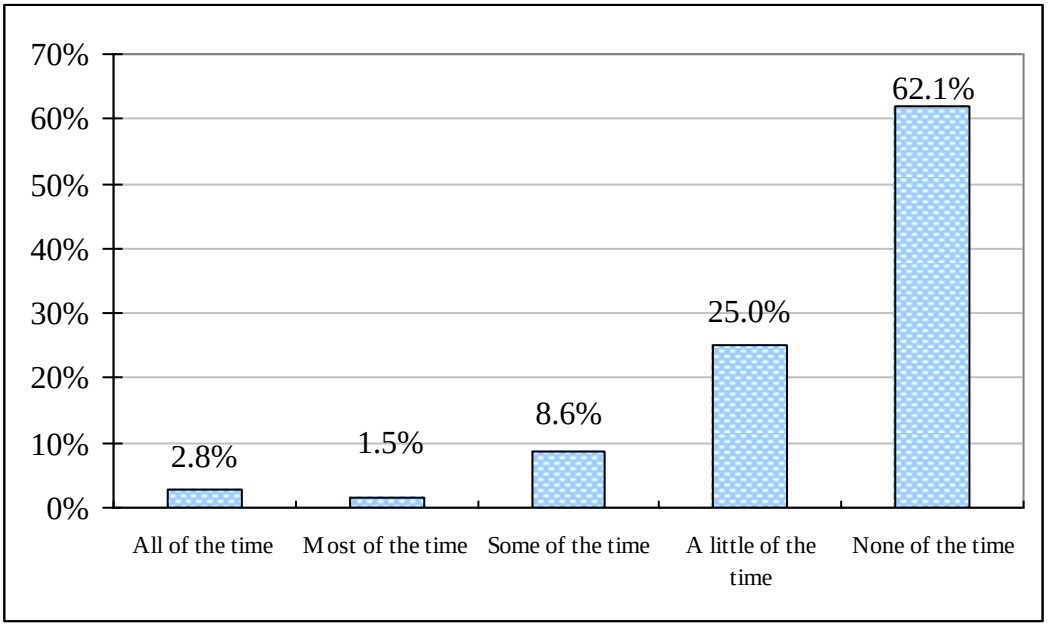


Base: All respondents excluding "did not eat out" and "do not remember"

3.12 Constipation

Over one-third (37.9%) of respondents had ever had constipation[29] during the thirty days prior to the survey, including 4.3% of respondents who reported that they had constipation all or most of the time during those thirty days (Fig. 3.12).

Fig. 3.12 Frequency of having constipation during the thirty days prior to the survey (Q29)



Base: All respondents = 2 185

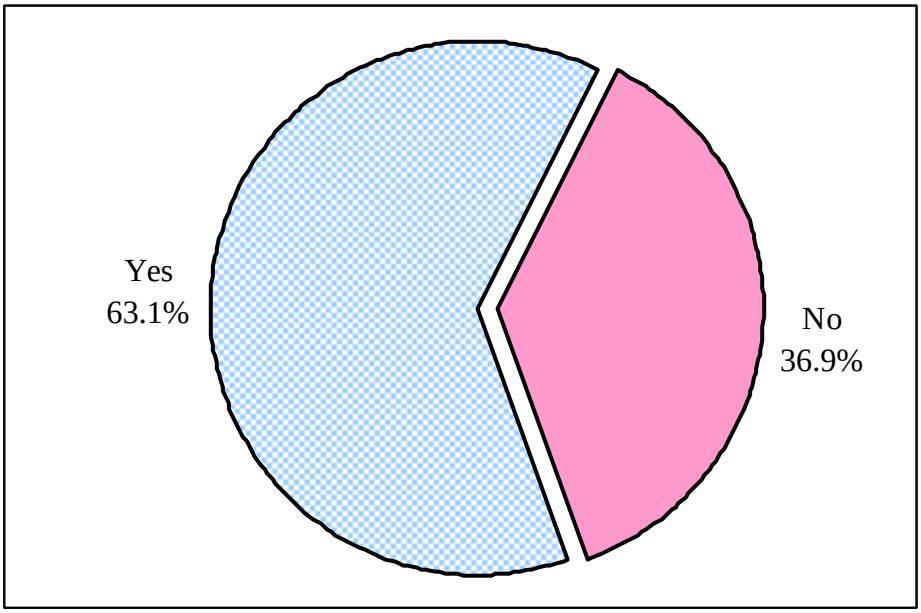
[29] Respondents were explained that constipation symptoms included having a bowel movement fewer than three times per week, straining to pass hard or dry faeces or having the sensation of incomplete bowel evacuation.

3.13 Cervical screening (for female respondents only)

Five questions were asked to understand female respondents' behaviour regarding cervical screening.

Overall, slightly less than two-thirds (63.1%) of the female respondents reported that they had a cervical smear before (Fig. 3.13).

Fig. 3.13: Being screened for cervical cancer before (Q30a)

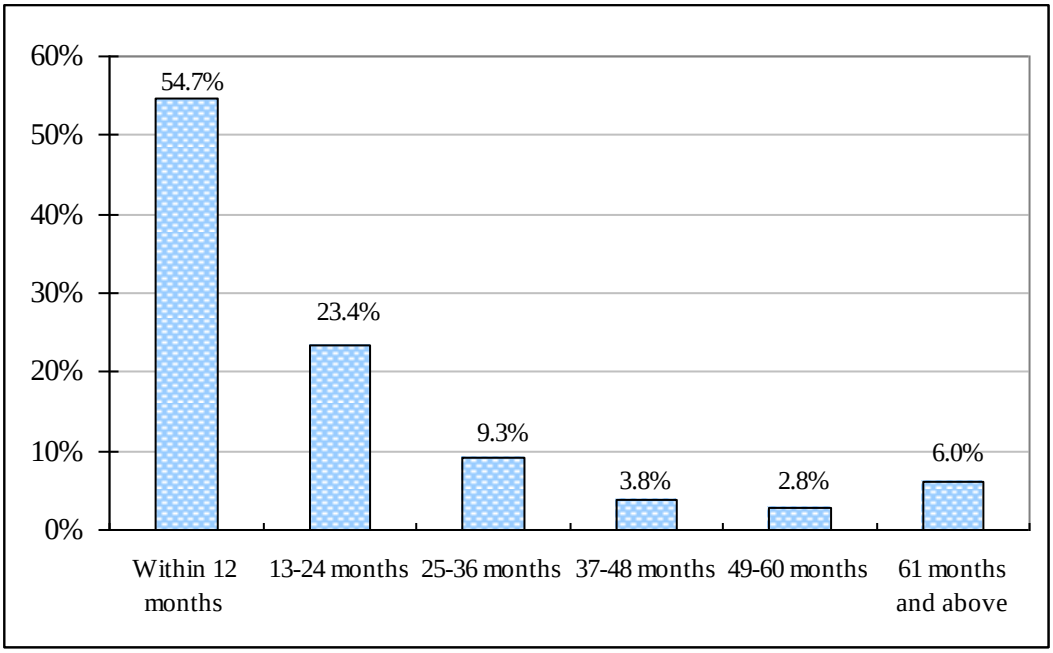


Base: All female respondents excluding "not sure" = 1 178

3.13.1 Last cervical smear

Of those female respondents who had had a cervical smear before, more than half (54.7%) of them had their last cervical smear taken within 12 months prior to the survey. Close to one-third (32.7%) of them had the examination within 13-36 months, while 12.6% of them had their last cervical smear 37 months or more ago (Fig. 3.13.1).

Fig. 3.13.1: Period of time since last cervical smear if ever had a smear (Q30b)

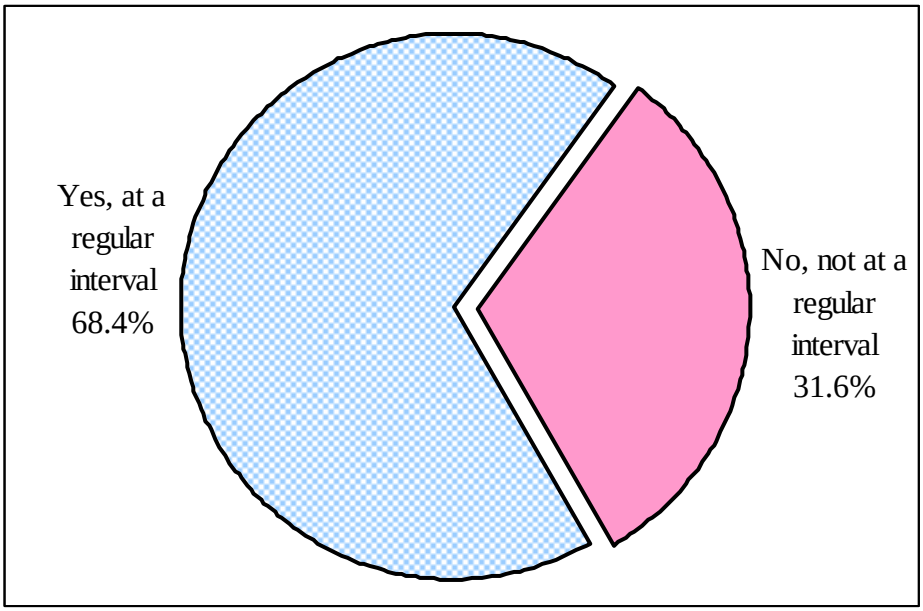


Base: Female respondents who ever had a cervical smear before, excluding "cannot remember" = 732

3.13.2 Frequency of having cervical smear

More than two-thirds (68.4%) of respondents who had a cervical smear before had the examination at a regular interval (Fig. 3.13.2a).

Fig. 3.13.2a: Whether having a cervical smear at a regular interval (Q30c)

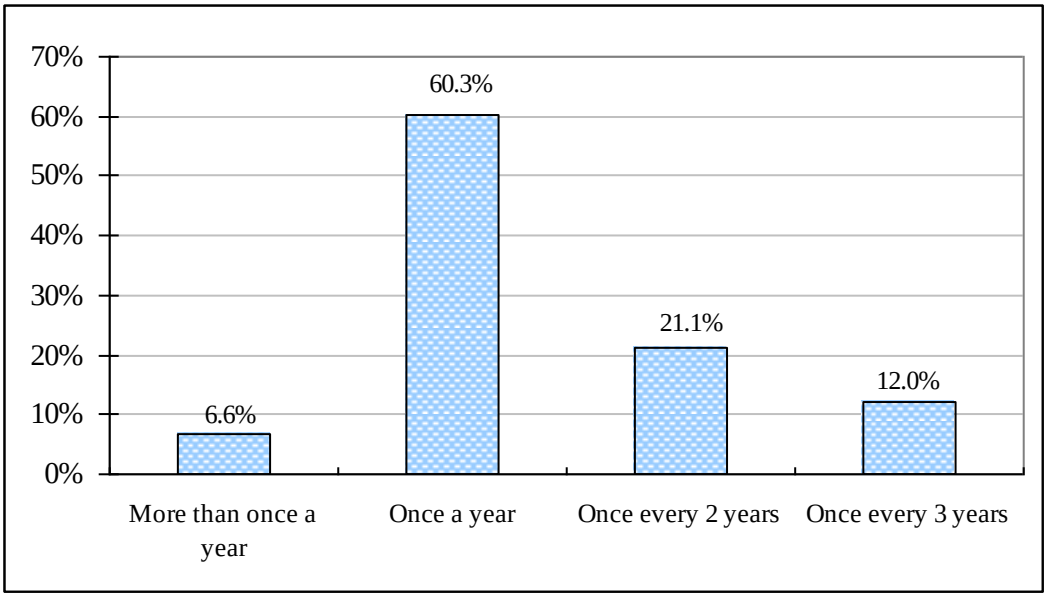


Base: Female respondents who ever had a cervical smear before = 744

Among those respondents who had a cervical smear at a regular interval, more than half (60.3%) of the female reported that they had a cervical smear "once a year".

About one-third (33.1%) had it once every two or three years. Another 6.6% had the test more than once a year (Fig. 3.13.2b).

Fig. 3.13.2b: Frequency of having cervical smear (Q30d)

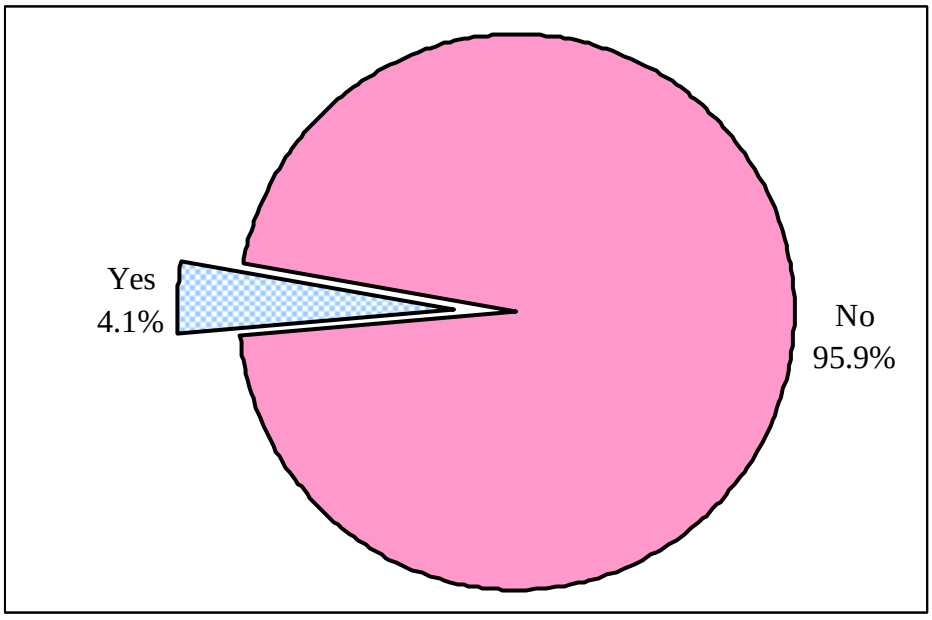


Base: Female respondents who had cervical smear at a regular interval, excluding "cannot remember" = 500

3.13.3 Whether had a total hysterectomy before

Among female respondents, 4.1% of them had a total hysterectomy (surgical removal of the entire uterus) (Fig. 3.13.3).

Fig. 3.13.3: Whether had a total hysterectomy (Q31)



Base: All female respondents excluding "don't know" and refusal = 1 180

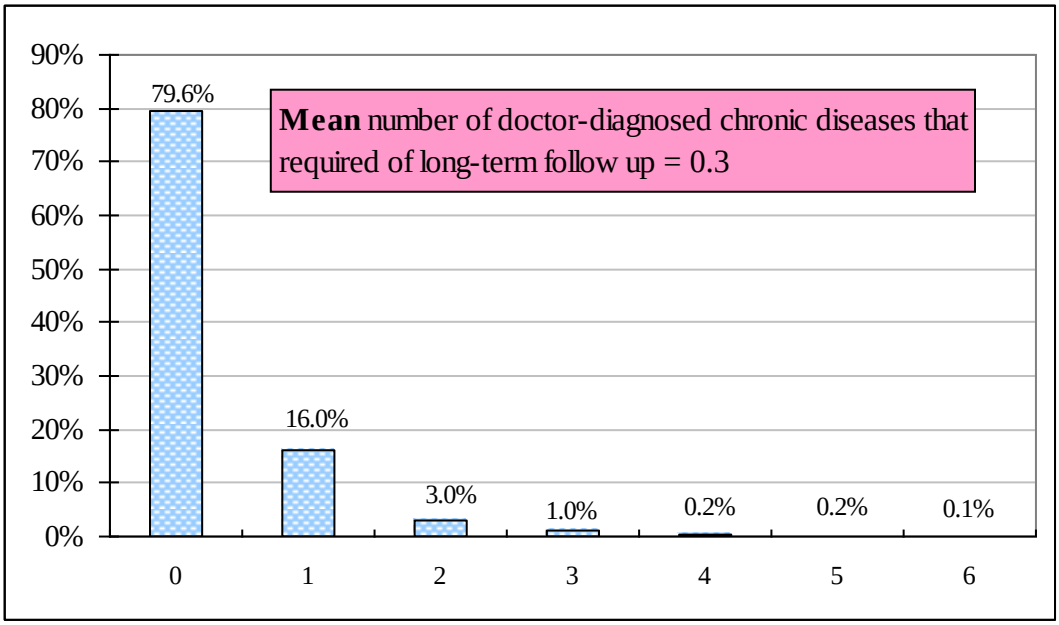
3.14 General health status

Two questions were asked in this section to understand respondents' general health status.

3.14.1 Doctor-diagnosed chronic diseases

About one-fifth (20.4%) of the respondents claimed that they had at least one doctor-diagnosed chronic disease that required long-term follow up. The average number of chronic diseases diagnosed was 0.3 (Fig. 3.14.1).

Fig. 3.14.1: Number of doctor-diagnosed chronic diseases that required long-term follow up (Q32)

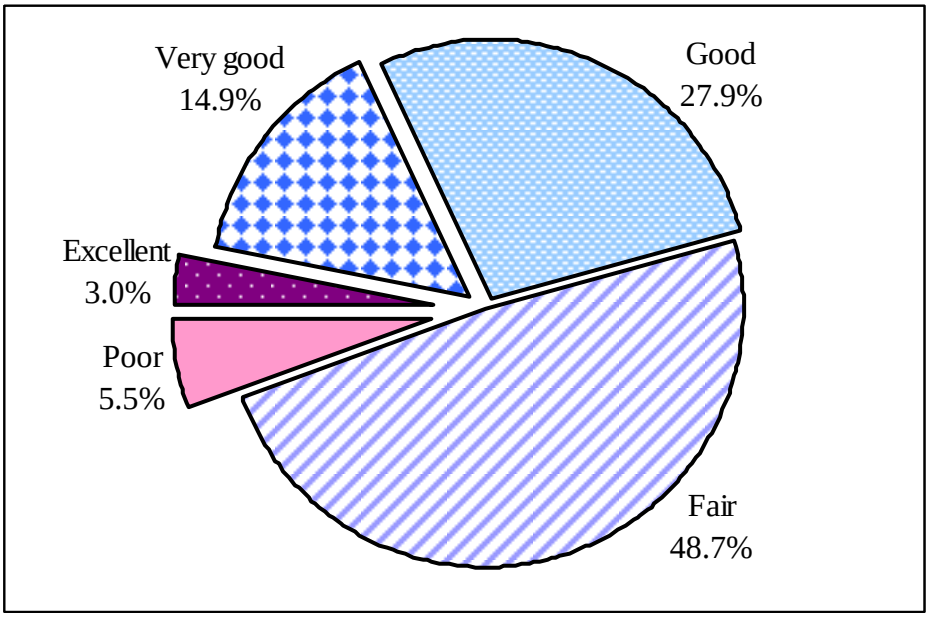


Base: All respondents excluding refusal = 2 184

3.14.2 Perception about general health status

When respondents were asked to self-assess their general health status, less than half (45.8%) of the respondents rated their health status as "good", "very good" or "excellent", while 5.5% considered their health status was "poor" (Fig. 3.14.2).

Fig. 3.14.2: Perception about general health status (Q33)



Base: All respondents excluding "don't know"= 2 184

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, marital status, educational attainment, 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. Additional cross tabulations are also done for special areas of interest. For example, Body Mass Index (BMI) is analyzed by perceptions about current weight.

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 responses of "don't know", "can't remember", "not sure", "not applicable", "refuse to answer" and "outliers" have been excluded from all the sub-group analyses in this chapter.

Table 4.1a: Re-grouping the responses of demographic information (Q1, Q34 – Q43)

Demographic variable	Original level	Re-grouped level	Sample size (weighted)
Gender	Male	Male	1002
	Female	Female	1183
Age group	No grouping	18 – 24	277
		25 – 34	468
		35 – 44	517
		45 – 54	555
		55 – 64	341
Marital status	Never married	Never married	760
	Married with child(ren)	Married	1308
	Married without child(ren)		
	Divorced/ Separated	Divorced/ Separated/ Widowed	111
	Widowed		
Educational attainment	Primary or below	Primary or below	240
	Had not completed secondary	Had not completed secondary	357
	Completed secondary (F.5)	Completed secondary (F.5)	577
	Matriculation	Matriculation	207
	Tertiary (non-degree)/ degree or above	Tertiary or above	804

Occupation	Employer/ Manager/ Administrator	Managerial/ Professional worker	534
	Professional		
	Associate professional		
	Clerk	Clerk	303
	Service worker	Service worker	208
	Shop sales worker		
	Skilled agricultural/ Fishery worker	Blue collar worker	304
	Craft and related worker		
	Plant and machine operator and assembler		
	Unskilled worker		
	Student	Not working person	797
	Home-maker		
	Unemployed person		
	Retired person		
	Other non-working person		
Monthly household income	Less than $2,000	Below $8,000	168
	$2,000 - $3,999		
	$4,000 - $5,999		
	$6,000 - $7,999		
	$8,000 - $9,999	$8,000 - $13,999	315
	$10,000 - $11,999		
	$12,000 - $13,999		
	$14,000 - $15,999	$14,000 - $19,999	173
	$16,000 - $17,999		
	$18,000 - $19,999		
	$20,000 - $24,999	$20,000 - $39,999	611
	$25,000 - $29,999		
	$30,000 - $34,999		
	$35,000 - $39,999		
	$40,000 - $44,999	$40,000 or above	446
	$45,000 - $49,999		
	$50,000 - $54,999		
	$55,000 - $59,999		
	$60,000 or above		

Type of living quarters	Public rental flats	Public rental flats	702
	Housing Authority subsidized sale flats	Subsidized sale flats	316
	Housing Society subsidized sale flats		
	Private residential flats	Private housing	1145
	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
Q7a, Q8a, Q10a	Average days per week spent on vigorous/moderate physical activities and walking	0 day	0-1 day
		1 day	
		2 days	2-3 days
		3 days	
Q13a, Q14a, Q15	Average days per week that respondents drink fruit/ vegetable juice, eat fruit/ vegetable	4 days	4-5 days
		5 days	
		6 days	6-7 days
		7 days	
Q12	Frequency of doing exercise in the leisure-time	Once or more a day	At least 4 times per week
		4-6 times per week	
		2-3 times per week	1-3 times per week
		Once a week	
		2-3 times a month	1-3 times per month
		Once a month	
		Less than once a month	Less than once a month
Q17b	Weekly frequency of drinking at least one alcoholic drink during the thirty days prior to the survey	Daily	6 days or more per week
		6 days per week	
		5 days per week	4-5 days per week
		4 days per week	
Q22a, Q23a	Weekly frequency of consuming red/ white meat during the thirty days prior to the survey	3 days per week	2-3 days per week
		2 days per week	
		1 day per week	1 day or less per week
		Less than 1 day per week	

Q17c	Average number of standard drinks consumed on the days drinking alcohol	No grouping	Less than 3 units
			3 -<5 units
			5-24 units
Q19	Number of consultation to health professional because of emotional problems	No grouping	None
			At least once
Q20	Average hours per day of sleeping	No grouping	Less than 6 hours
			6-8 hours
			More than 8 hours
Q21	Number of close relatives or friends	No grouping	None
			1-2
			3-4
			5-6
			7 or more
Q22a, Q22b, Q23a, Q23b	Average consumption per day of red/ white meat	No grouping	Less than 2 taels
			2-4 taels
			More than 4 taels
	Average total consumption per day of red and white meat	No grouping	Less than 4 taels
			4-6 taels
			More than 6 taels
Q24	Average number of days per week of consuming processed meat	Daily	4 or more days per week
		6 days per week	
		5 days per week	
		4 days per week	
		3 days per week	2-3 days per week
		2 days per week	
		1 day per week	1 day or less per week
		Less than 1 day per week	
Q29	Frequency of having constipation	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	

Q30b	Period of time since last cervical smear	1-12 months	1-12 months
		13-24 months	13-36 months
		25-36 months	
		37-48 months	37 or more months
		49-60 months	
		61 months or above	
Q30d	Frequency of having cervical smear	More than once a year	At least once a year
		Once a year	
		Once every 2 years	Once every 2 years
		Once every 3 years	Once every 3 years
Q32	Number of doctor-diagnosed chronic diseases	No grouping	None
			At least one
Q33	General health status	Excellent	Excellent/ Very good/ Good
		Very good	
		Good	
		Fair	Fair
		Poor	Poor

Three types of statistical tests are used for sub-group analysis in this report, namely Pearson chi-square test, Kruskal-Wallis test and Spearman's rank correlation [30].

[30] These statistical tests used SPSS. Formulae for the three tests are included for reference.

Pearson chi-square statistics:

$$\lambda^2 = \sum_i \sum_j \frac{(Oij - eij)^2}{eij}$$

where O_{ij} is the observed value corresponding to the i[th] column and the j[th] row, e_{ij} is the expected value corresponding to the i[th] column and the j[th] row. The calculation of e_{ij} is as follows: 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 and 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, Xi and Yi are the i[th] rank of X and Y respectively and $\overline{X}$ and $\overline{Y}$ 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.

When both variables are nominal, the 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. As for the Pearson chi-square test, only those tables where no more than 20% of the cells had expected values of less than 5 are included.

Only the Pearson 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.

4.2 Weight status and control

4.2.1 Weight status

In this section, respondents are classified as "underweight", "normal", "overweight" and "obese" based on their BMI and the WHO classification for the Asian standard. "Underweight" is defined as having a BMI below 18.5; "normal" refers to having a BMI between 18.5 and less than 23.0; "overweight" is having a BMI between 23.0 and less than 25.0; and "obese" is defined as having a BMI greater than or equal to 25.0.

Using the Asian standard of WHO classification, weight status is associated significantly with five demographic variables including gender, age, marital status, educational attainment, and occupation (Table 4.2.1).

More male respondents (31.0%) were classified as "obese" while more female respondents (14.5%) were classified as "underweight". In terms of age, respondents aged 34 or below (ranged from 15.1% to 23.5%) were more likely to be "underweight" while those aged 35 or above were more likely to be classified as "overweight" (ranged from 19.8% to 26.0%) or "obese" (ranged from 22.7% to 29.7%).

The never married respondents (16.6%) were more likely to be "underweight" than the married respondents and the divorced/ separated/ widowed respondents (7.0% and 9.3% respectively). A relatively higher proportion of married respondents (28.1%) were classified as "obese".

A relatively higher proportion of respondents with primary education level or below (36.5%) were classified as "obese". The higher the education level, the more likely the respondents were classified as "underweight".

Regarding the respondents' occupation, a relatively higher proportion of blue collar workers (30.2%) were classified as "obese".

Table 4.2.1: Weight status based on BMI and the classification of WHO (Asian standard)

Variable	Level	Base	Under-weight	Normal	Over-weight	Obese	P-value		
							Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	964	5.5%	43.3%	20.2%	31.0%		0.000	
	Female	1145	14.5%	54.8%	15.3%	15.4%			
Age group	18-24	267	23.5%	62.2%	7.2%	7.2%			0.000
	25-34	447	15.1%	56.6%	10.4%	17.8%			
	35-44	504	7.3%	50.2%	19.8%	22.7%			
	45-54	538	6.1%	42.8%	21.6%	29.4%			
	55-64	329	4.7%	39.6%	26.0%	29.7%			

Marital status	Never married	729	16.6%	58.9%	11.1%	13.5%		0.000	
	Married	1269	7.0%	44.1%	20.8%	28.1%			
	Divorced/ Separated/ Widowed	108	9.3%	51.2%	21.1%	18.4%			
Educational attainment	Primary or below	226	5.8%	39.8%	17.9%	36.5%			0.000
	Had not completed secondary	342	6.9%	47.5%	21.0%	24.7%			
	Completed secondary (F5)	558	10.5%	51.6%	16.1%	21.7%			
	Matriculation	200	11.7%	50.2%	21.6%	16.5%			
	Tertiary (Non-degree, degree or above)	783	12.9%	51.6%	15.9%	19.7%			
Occupation	Managerial/ Professional worker	526	7.1%	48.2%	20.9%	23.7%		0.000	
	Clerk	292	11.5%	54.6%	15.6%	18.3%			
	Service worker	200	10.2%	51.3%	15.8%	22.7%			
	Blue collar worker	292	4.7%	46.6%	18.5%	30.2%			
	Not working	761	14.3%	49.7%	16.0%	19.9%			

4.2.2 Perception about current weight status

Perception about current weight status is associated significantly with respondents' gender, age, marital status, education level and occupation (Table 4.2.2a).

A relatively higher proportion of female respondents (45.5%) considered themselves as "overweight", while male respondents (12.3%) were more likely to consider themselves as "underweight". Respondents aged 35 or above (ranged from 46.4% to 48.6%) were more likely to consider themselves as "overweight" than younger age groups (ranged from 25.3% to 37.3%).

In terms of marital status, married respondents (48.1%) and divorced/ separated/ widowed respondents (49.4%) were more likely to have perceived themselves as "overweight". Regarding the respondents' education level, a relatively higher proportion of respondents with primary education level or below (48.8%) considered themselves as "overweight".

Regarding to the respondents' occupation, a relatively higher proportion of managerial/ professional workers (48.0%), clerks (44.7%), non-working respondents (42.6%) and service workers (41.4%) considered themselves as "overweight".

Table 4.2.2a: Perception about current weight status (Q4)

Variable	Level	Base	Under-weight	Just right	Over-weight	P-value		
						Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	990	12.3%	48.4%	39.3%		0.000	
	Female	1172	6.7%	47.8%	45.5%			
Age group	18-24	276	13.3%	61.4%	25.3%			0.000
	25-34	462	10.9%	51.8%	37.3%			
	35-44	513	8.6%	43.2%	48.2%			
	45-54	551	8.1%	43.3%	48.6%			
	55-64	334	6.6%	47.0%	46.4%			
Marital status	Never married	752	12.8%	54.9%	32.3%		0.000	
	Married	1295	7.3%	44.7%	48.1%			
	Divorced/ Separated/ Widowed	110	8.7%	41.9%	49.4%			
Educational attainment	Primary or below	234	6.5%	44.7%	48.8%			0.001
	Had not completed secondary	354	9.6%	48.3%	42.0%			
	Completed secondary (F5)	573	8.0%	47.8%	44.2%			
	Matriculation	207	8.6%	51.6%	39.8%			
	Tertiary (Non-degree, degree or above)	794	10.9%	48.3%	40.8%			
Occupation	Managerial/ Professional worker	529	9.2%	42.8%	48.0%		0.007	
	Clerk	301	6.6%	48.7%	44.7%			
	Service worker	208	11.3%	47.3%	41.4%			
	Blue collar worker	300	10.6%	56.4%	33.0%			
	Not working	789	9.4%	48.0%	42.6%			

Analyses of respondents' perception about their current weight by their weight status based on the Asian standard of WHO classification was carried out. There are significant associations between these two types of variables (Table 4.2.2b).

For those respondents who were classified as "underweight", more than half of them considered themselves as "just right" (55.0%) or "overweight" (4.3%).

Among those respondents who were classified as "overweight", 36.4% of them considered themselves as "just right". Also, 15.2% of "obese" respondents perceived themselves as "just right".

Table 4.2.2b: Perception about current weight status analysed by weight status based on WHO classification (Asian standard)

Variable	Level	Base	Perception of current weight			P-value		
			Under-weight	Just right	Over-weight	Chi-Square Test	Kruskal-Wallis test	Rank Correlation
WHO classification (Asian standard)	Underweight	218	40.6%	55.0%	4.3%			0.000
	Normal	1042	9.5%	66.0%	24.5%			
	Overweight	369	0.8%	36.4%	62.8%			
	Obese	474	0.7%	15.2%	84.1%			

4.2.3 Weight control

Statistically significant associations exist between respondents' behaviour in controlling weight deliberately over the twelve months prior to the survey and their educational attainment, occupation, monthly household income and type of living quarters.

Comparatively speaking, respondents with secondary education (33.7%) and tertiary education (33.6%), managerial/ professional workers (37.3%), those with monthly household income of $20,000 or above (ranged from 32.3% to 36.6%) and those living in private housing (33.3%) were more likely than their respective counterparts to have controlled their weight deliberately during the twelve months prior to the survey (Table 4.2.3a).

Table 4.2.3a: Controlling weight deliberately during the twelve months prior to the survey (Q5a)

Variable	Level	Base	Yes	No	P-value		
					Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Educational attainment	Primary or below	237	19.9%	80.1%		0.000	
	Had not completed secondary	355	24.2%	75.8%			
	Completed secondary (F5)	575	33.7%	66.3%			
	Matriculation	207	27.6%	72.4%			
	Tertiary (Non-degree, degree or above)	797	33.6%	66.4%			
Occupation	Managerial/ Professional worker	530	37.3%	62.7%	0.000		
	Clerk	301	28.8%	71.2%			
	Service worker	208	31.7%	68.3%			
	Blue collar worker	303	21.9%	78.1%			
	Not working	791	28.4%	71.6%			

Monthly household income	Below $8,000	166	23.8%	76.2%		0.000	
	$8,000 - $13,999	315	24.6%	75.4%			
	$14,000 - $19,999	172	22.0%	78.0%			
	$20,000 - $39,999	609	32.3%	67.7%			
	$40,000 or above	442	36.6%	63.4%			
Type of living quarters	Public rental flats	697	24.6%	75.4%	0.000		
	Subsidized sale flats	314	30.8%	69.2%			
	Private housing	1138	33.3%	66.7%			

Respondents' behaviour in controlling weight is associated significantly with the weight status by the Asian standard of WHO classification.

Respondents who were classified as "overweight" (37.1%) or "obese" (43.1%) were more likely to have reported that they had controlled their weight during the twelve months prior to the survey than other respondents (Table 4.2.3b).

Table 4.2.3b: Controlling weight deliberately during the twelve months (Q5a) analysed by weight status

Variable	Level	Base	Yes	No	P-value		
					Chi-Square Test	Kruskal-Wallis test	Rank Correlation
WHO classification (Asian standard)	Underweight	219	15.0%	85.0%		0.000	
	Normal	1045	25.1%	74.9%			
	Overweight	370	37.1%	62.9%			
	Obese	475	43.1%	56.9%			

4.2.4 Methods adopted to control weight

4.2.4.1 Taking drugs or products

The weight control method of taking drugs or products is associated significantly with gender and age.

A relatively higher proportion of female respondents (14.3%) and those aged 18-24 (18.5%) reported that they had taken drugs or products to control weight when compared with their respective counterparts (Table 4.2.4.1).

Table 4.2.4.1: Taking drugs or products to control weight (Q6a)

Variable	Level	Base	Yes	No	P-value		
					Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	290	6.3%	93.7%	0.001		
	Female	362	14.3%	85.7%			
Age group	18-24	80	18.5%	81.5%		0.016	
	25-34	154	12.7%	87.3%			
	35-44	144	8.3%	91.7%			
	45-54	173	10.0%	90.0%			
	55-64	90	5.7%	94.3%			

4.2.4.2 Consulting doctors or dieticians

The weight control method of consulting doctors or dieticians is associated significantly with age.

Respondents aged 55-64 (15.2%) were more likely than their counterparts to control their weight by consulting doctors or dieticians (Table 4.2.4.2).

Table 4.2.4.2: Consulting doctors or dieticians (Q6b)

Variable	Level	Base	Yes	No	P-value		
					Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Age group	18-24	80	4.9%	95.1%		0.032	
	25-34	154	5.9%	94.1%			
	35-44	144	7.3%	92.7%			
	45-54	173	4.9%	95.1%			
	55-64	90	15.2%	84.8%			

4.2.4.3 Going to weight control or beauty parlours

The weight control method of going to weight control or beauty parlours is associated significantly with gender and monthly household income.

Female respondents (5.9%) and those with monthly household income of $40,000 or above (7.5%) were more likely than their respective counterparts to control their weight by going to weight control or beauty parlours (Table 4.2.4.3).

Table 4.2.4.3: Going to weight control or beauty parlours (Q6c)

Variable	Level	Base	Yes	No	P-value		
					Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	290	1.0%	99.0%	0.001		
	Female	362	5.9%	94.1%			
Monthly household income	Below $8,000	39	1.9%	98.1%		0.007	
	$8,000 - $13,999	77	1.7%	98.3%			
	$14,000 - $19,999	38	0.0%	100.0%			
	$20,000 - $39,999	197	3.6%	96.4%			
	$40,000 or above	162	7.5%	92.5%			

4.2.4.4 Doing physical exercises

The weight control method of doing physical exercises is associated significantly with gender and occupation.

Male respondents (90.0%), blue collar workers (91.9%), non-working respondents (88.6%), managerial/ professional workers (87.6%) and service workers (83.3%) were more likely than their respective counterparts to control their weight by doing physical exercises (Table 4.2.4.4).

Table 4.2.4.4: Doing physical exercises (Q6d)

Variable	Level	Base	Yes	No	P-value		
					Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	290	90.0%	10.0%	0.006		
	Female	362	82.5%	17.5%			
Occupation	Managerial/ Professional worker	197	87.6%	12.4%	0.001		
	Clerk	87	72.2%	27.8%			
	Service worker	66	83.3%	16.7%			
	Blue collar worker	66	91.9%	8.1%			
	Not working	224	88.6%	11.4%			

4.2.4.5 Changing dietary habit

The weight control method of changing dietary habit is associated significantly with monthly household income.

Respondents who had monthly household income of $20,000 or above (ranged from 76.1% to 80.5%) were more likely than their counterparts to have controlled their weight by changing their dietary habit (Table 4.2.4.5).

Table 4.2.4.5: Changing dietary habit (Q6e)

Variable	Level	Base	Yes	No	P-value		
					Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Monthly household income	Below $8,000	39	73.1%	26.9%		0.049	
	$8,000 - $13,999	77	69.4%	30.6%			
	$14,000 - $19,999	38	71.8%	28.2%			
	$20,000 - $39,999	197	76.1%	23.9%			
	$40,000 or above	162	80.5%	19.5%			

4.3 Physical activities and leisure-time exercises

4.3.1 Vigorous physical activities

The number of days spent on doing vigorous physical activities for at least 10 minutes during the seven days prior to the survey is associated significantly with respondents' demographic characteristics including gender and age.

Female respondents (78.9%) and those aged 25-64 (ranged from 75.6% to 80.7%) were more likely than their respective counterparts to have engaged in vigorous physical activities for at least 10 minutes on only one day or less during the seven days before interview (Table 4.3.1).

Table 4.3.1: Number of days spent on doing vigorous physical activities for at least 10 minutes during the seven days prior to the survey (Q7a)

Variable	Level	Base	0-1 day	2-3 days	4-5 days	6-7 days	P-value		
							Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	1002	73.2%	17.4%	3.9%	5.5%		0.000	
	Female	1183	78.9%	13.1%	3.2%	4.7%			
Age group	18-24	277	66.5%	25.2%	5.5%	2.9%			0.000
	25-34	468	76.4%	14.7%	2.5%	6.3%			
	35-44	517	75.6%	16.5%	3.8%	4.1%			
	45-54	555	78.6%	12.8%	3.6%	5.0%			
	55-64	341	80.7%	9.5%	2.7%	7.1%			

4.3.2 Moderate physical activities

The number of days spent on doing moderate physical activities for at least 10 minutes during the seven days prior to the survey is associated significantly with respondents' marital status and occupation.

Respondents who were married (14.9%) or divorced/ separated/ widowed respondents (11.2%), blue collar workers (16.5%) and non-working respondents (14.1%) were more likely to have spent 6-7 days on moderate physical activities for at least 10 minutes than their respective counterparts during the seven days prior to the survey (Table 4.3.2).

Table 4.3.2: Number of days spent on doing moderate physical activities for at least 10 minutes during the seven days prior to the survey (Q8a)

Variable	Level	Base	0-1 day	2-3 days	4-5 days	6-7 days	P-value		
							Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Marital status	Never married	760	67.7%	19.1%	6.1%	7.1%		0.006	
	Married	1307	61.2%	17.3%	6.6%	14.9%			
	Divorced/ Separated/ Widowed	111	68.8%	12.0%	8.0%	11.2%			
Occupation	Managerial/ Professional worker	534	66.4%	19.2%	5.3%	9.0%		0.029	
	Clerk	303	69.4%	17.0%	5.4%	8.2%			
	Service worker	207	63.2%	17.4%	9.6%	9.7%			
	Blue collar worker	304	62.8%	14.4%	6.3%	16.5%			
	Not working	797	60.5%	18.0%	7.3%	14.1%			

4.3.3 Walking

Significant associations exist between the number of days spent on walking for at least 10 minutes during the seven days prior to the survey and respondents' age, marital status, educational attainment, occupation and monthly household income.

A relatively higher proportion of respondents who were married (78.4%) or divorced/ separated/ widowed respondents (78.4%), those who had not completed secondary education or below (ranged from 81.3% to 82.8%), service workers (85.3%), those who had monthly household income below $8,000 (78.1%) reported that they walked for at least 10 minutes on 6-7 days when compared with their respective counterparts within the seven days prior to the survey. Also, the older the respondents, the more likely they were to report that they walked for at least 10 minutes on 6-7 days than their respective counterparts within the seven days prior to the survey (Table 4.3.3).

Table 4.3.3: Number of days spent on walking for at least 10 minutes during the seven days prior to the survey (Q10a)

Variable	Level	Base	0-1 day	2-3 days	4-5 days	6-7 days	P-value		
							Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Age group	18-24	277	4.0%	10.2%	17.9%	67.9%			0.000
	25-34	468	4.1%	8.3%	11.4%	76.2%			
	35-44	517	5.5%	8.8%	9.2%	76.5%			
	45-54	555	5.8%	5.8%	11.3%	77.1%			
	55-64	341	5.0%	8.5%	5.2%	81.4%			

Marital status	Never married	760	4.3%	9.8%	13.8%	72.2%		0.003	
	Married	1308	5.1%	7.1%	9.4%	78.4%			
	Divorced/ Separated/ Widowed	111	7.2%	8.4%	6.1%	78.4%			
Educational attainment	Primary or below	240	5.6%	6.0%	7.1%	81.3%			0.000
	Had not completed secondary	357	4.3%	6.3%	6.6%	82.8%			
	Completed secondary (F5)	577	5.2%	8.3%	8.2%	78.3%			
	Matriculation	207	6.1%	7.5%	10.7%	75.7%			
	Tertiary (Non-degree, degree or above)	804	4.5%	9.4%	15.4%	70.6%			
Occupation	Managerial/ Professional worker	534	5.3%	8.1%	12.7%	74.0%		0.003	
	Clerk	303	5.7%	9.1%	9.7%	75.6%			
	Service worker	208	6.2%	3.6%	4.8%	85.3%			
	Blue collar worker	304	5.9%	5.2%	8.1%	80.8%			
	Not working	797	3.8%	10.1%	12.8%	73.3%			
Monthly household income	Below $8,000	168	6.6%	7.4%	8.0%	78.1%			0.033
	$8,000 - $13,999	315	4.1%	8.3%	10.8%	76.8%			
	$14,000 - $19,999	173	4.2%	7.8%	10.1%	77.9%			
	$20,000 - $39,999	611	5.2%	7.7%	10.3%	76.9%			
	$40,000 or above	446	6.4%	8.2%	13.4%	71.9%			

4.3.4 Physical activity level based on the analysis of IPAQ

The physical activity level based on the IPAQ analysis is associated significantly with respondents' educational attainment, occupation, monthly household income and type of living quarters.

Respondents who had not completed secondary education or with education at primary or below (ranged from 28.5% to 31.1%), service workers (35.8%) or blue collar workers (32.4%), those with household income below $20,000 (ranged from 25.1% to 31.4%) and those living in public rental flats (27.4%) were more likely to have their level of physical activity classified as "high" when compared with their respective counterparts (Table 4.3.4).

Table 4.3.4: Physical activity level classified based on categorical score derived from the analysis of IPAQ

Variable	Level	Base	Low	Moderate	High	P-value		
						Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Educational attainment	Primary or below	234	16.6%	54.9%	28.5%		0.000	
	Had not completed secondary	352	16.9%	52.0%	31.1%			
	Completed secondary (F5)	570	22.5%	52.6%	24.9%			
	Matriculation	206	23.0%	51.4%	25.5%			
	Tertiary (Non-degree, degree or above)	800	23.0%	61.4%	15.6%			
Occupation	Managerial/ Professional worker	532	21.7%	62.5%	15.8%	0.000		
	Clerk	303	29.2%	56.0%	14.8%			
	Service worker	203	20.2%	44.0%	35.8%			
	Blue collar worker	300	18.8%	48.8%	32.4%			
	Not working	785	18.8%	57.2%	24.0%			
Monthly household income	Below $8,000	164	22.8%	45.8%	31.4%		0.003	
	$8,000 - $13,999	308	22.0%	53.0%	25.1%			
	$14,000 - $19,999	172	14.9%	57.3%	27.7%			
	$20,000 - $39,999	606	19.8%	59.4%	20.8%			
	$40,000 or above	446	23.9%	59.1%	17.0%			
Type of living quarters	Public rental flats	694	20.2%	52.4%	27.4%	0.011		
	Subsidized sale flats	312	23.8%	54.8%	21.4%			
	Private housing	1135	21.1%	58.3%	20.6%			

4.3.5 Physical activity with moderate and vigorous intensities

The number of days having moderate physical activities for at least 30 minutes or vigorous physical activities for at least 20 minutes during the seven days prior to the survey is associated significantly with respondents' gender, marital status and

occupation.

Female respondents (60.4%), divorced/ separated/ widowed respondents (67.3%) and clerks (70.1%) were more likely to have spent one day or less in moderate physical activities for at least 30 minutes or vigorous physical activities for at least 20 minutes during the seven days prior to the survey when compared with their respective counterparts (Table 4.3.5).

Table 4.3.5: Number of days spent on moderate physical activities for at least 30 minutes or vigorous physical activities for at least 20 minutes during the seven days prior to the survey (Q9)

Variable	Level	Base	0-1 day	2-3 days	4-5 days	6-7 days	P-value		
							Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	1002	55.0%	22.3%	9.2%	13.5%		0.023	
	Female	1182	60.4%	18.7%	7.9%	13.0%			
Marital status	Never married	760	59.5%	24.9%	7.8%	7.9%		0.022	
	Married	1307	56.1%	18.5%	9.2%	16.1%			
	Divorced/ Separated/ Widowed	111	67.3%	11.5%	5.8%	15.4%			
Occupation	Managerial/ Professional worker	534	58.6%	25.0%	7.8%	8.6%		0.000	
	Clerk	303	70.1%	17.3%	5.9%	6.7%			
	Service worker	207	52.8%	21.3%	8.8%	17.1%			
	Blue collar worker	304	58.5%	13.8%	7.8%	19.9%			
	Not working	797	53.0%	21.3%	10.6%	15.2%			

4.3.6 Sitting

The average time spent on sitting on a weekday during the seven days prior to the survey is associated significantly with respondents' gender, age, marital status, education level, occupation, monthly household income and type of living quarters.

Male respondents (24.7%), those aged 18-34 (ranged from 32.7% to 32.8%), those never married (33.2%), those with education level of matriculation or above (ranged from 31.5% to 31.7%), clerks (39.3%), managerial/ professional workers (34.4%), those with monthly household income of $20,000 or above (ranged from 25.2% to 29.5%) and those living in private housing (25.9%) were more likely than their respective counterparts to sit 10 hours or above on a weekday on average during the seven days prior to the survey. (Table 4.3.6)

Table 4.3.6: Average time spent on sitting on a weekday during the seven days prior to the survey (Q11)

Variable	Level	Base	Below 2hrs	2 - <4hrs	4 - <6hrs	6 - <8hrs	8 - <10hrs	10hrs or above	P-value		
									Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	981	3.8%	16.2%	22.5%	15.9%	16.9%	24.7%		0.000	
	Female	1153	4.7%	19.0%	21.6%	17.6%	15.5%	21.7%			
Age group	18-24	271	0.6%	5.9%	17.8%	26.2%	16.9%	32.7%			0.000
	25-34	459	3.6%	9.4%	19.1%	16.8%	18.3%	32.8%			
	35-44	502	3.7%	23.6%	20.1%	15.8%	15.6%	21.2%			
	45-54	544	7.1%	18.8%	24.9%	15.1%	15.4%	18.6%			
	55-64	334	4.4%	27.6%	27.6%	13.6%	14.7%	12.1%			
Marital status	Never married	742	2.7%	8.5%	18.7%	19.5%	17.5%	33.2%		0.000	
	Married	1276	5.0%	22.9%	23.3%	15.6%	15.8%	17.4%			
	Divorced/ Separated/ Widowed	110	6.5%	19.6%	29.4%	12.7%	11.2%	20.5%			
Educational attainment	Primary or below	235	10.0%	31.7%	28.3%	14.2%	7.2%	8.6%			0.000
	Had not completed secondary	353	7.5%	29.0%	29.2%	13.5%	13.3%	7.5%			
	Completed secondary (F5)	560	3.1%	19.3%	23.2%	15.6%	15.1%	23.8%			
	Matriculation	203	3.2%	12.2%	21.1%	16.2%	15.7%	31.5%			
	Tertiary (Non-degree, degree or above)	783	2.3%	8.7%	16.3%	20.0%	21.0%	31.7%			
Occupation	Managerial/ Professional worker	519	1.4%	8.8%	18.9%	17.1%	19.5%	34.4%		0.000	
	Clerk	293	1.6%	7.6%	13.6%	14.3%	23.5%	39.3%			
	Service worker	206	6.6%	27.9%	24.5%	21.1%	8.0%	11.9%			
	Blue collar worker	298	8.9%	27.8%	29.4%	9.9%	12.5%	11.5%			
	Not working	781	5.1%	20.7%	24.1%	18.8%	14.5%	16.8%			
Monthly household income	Below $8,000	163	7.9%	19.6%	26.6%	14.2%	15.8%	15.9%			0.000
	$8,000 - $13,999	309	6.3%	21.1%	24.9%	17.5%	14.7%	15.5%			
	$14,000 - $19,999	172	5.0%	24.8%	24.7%	14.3%	13.1%	18.1%			
	$20,000 - $39,999	593	2.7%	17.1%	22.6%	16.9%	15.6%	25.2%			
	$40,000 or above	435	2.8%	11.2%	15.4%	18.8%	22.2%	29.5%			
Type of living quarters	Public rental flats	690	6.5%	21.8%	21.6%	15.5%	15.4%	19.2%		0.000	
	Subsidized sale flats	308	6.6%	22.7%	22.2%	13.6%	12.6%	22.4%			
	Private housing	1113	2.3%	13.6%	22.0%	18.7%	17.6%	25.9%			

4.3.7 Leisure-time exercises

Frequency of doing exercise in leisure-time during the thirty days prior to the survey is associated significantly with respondents' gender, marital status, educational attainment, occupation, monthly household income and type of living quarters.

Female respondents (43.7%), divorced/ separated/ widowed respondents (55.2%), blue collar workers (51.9%) and those living in subsidized sale flats (44.8%) and public rental flats (43.0%) were more likely than their respective counterparts to have reported that they had leisure-time exercise less than once a month during the thirty days prior to the survey. Also, the lower the education level and monthly household income of the respondents, the more likely they had leisure-time exercise less than once a month than their respective counterparts (Table 4.3.7).

Table 4.3.7: Frequency of doing exercise in leisure-time during the thirty days prior to the survey (Q12)

Variable	Level	Base	At least 4 times per week	1-3 times per week	1-3 times per month	Less than once a month	P-value		
							Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	995	16.2%	39.2%	9.9%	34.6%		0.000	
	Female	1175	16.7%	29.2%	10.5%	43.7%			
Marital status	Never married	756	12.2%	42.2%	13.4%	32.2%		0.000	
	Married	1297	19.3%	30.0%	8.4%	42.3%			
	Divorced/ Separated/ Widowed	110	12.7%	22.1%	10.1%	55.2%			
Educational attainment	Primary or below	238	23.2%	18.2%	4.7%	53.9%			0.000
	Had not completed secondary	354	19.3%	23.7%	8.0%	49.0%			
	Completed secondary (F5)	576	16.6%	34.4%	9.6%	39.4%			
	Matriculation	202	17.3%	34.3%	14.2%	34.2%			
	Tertiary (Non-degree, degree or above)	799	12.9%	42.3%	12.3%	32.5%			
Occupation	Managerial/ Professional worker	532	12.6%	40.7%	13.6%	33.0%		0.000	
	Clerk	302	10.9%	34.7%	13.3%	41.0%			
	Service worker	207	12.4%	33.5%	10.7%	43.4%			
	Blue collar worker	304	14.1%	25.5%	8.5%	51.9%			
	Not working	789	23.3%	32.2%	7.3%	37.2%			

Monthly household income	Below $8,000	168	18.7%	17.8%	4.7%	58.8%			0.001
	$8,000 - $13,999	311	17.2%	30.2%	9.7%	42.9%			
	$14,000 - $19,999	172	17.7%	33.1%	6.9%	42.2%			
	$20,000 - $39,999	609	14.6%	35.8%	12.0%	37.6%			
	$40,000 or above	444	13.0%	40.1%	12.1%	34.8%			
Type of living quarters	Public rental flats	698	16.4%	30.1%	10.6%	43.0%		0.002	
	Subsidized sale flats	313	14.0%	32.1%	9.0%	44.8%			
	Private housing	1137	17.2%	36.5%	10.4%	36.0%			

4.4 Fruit and vegetable consumption

4.4.1 Frequency of drinking fruit or vegetable juice per week

The frequency of drinking fruit or vegetable juice is associated significantly with respondents' age, marital status, educational attainment, occupation and monthly household income.

A relatively higher proportion of respondents aged between 45 and 64 (ranged from 88.7% to 91.1%), divorced/ separated/ widowed respondents (93.0%), respondents who had not completed secondary education or below (ranged from 89.0% to 92.3%), clerks (89.5%), blue collar workers (89.0%), and those with monthly household income below $40,000 (ranged from 85.0% to 88.7%) reported that they drank fruit or vegetable juice one day or less in a week on average than their respective counterparts (Table 4.4.1).

Table 4.4.1: Number of days per week in which respondents drank fruit or vegetable juice (Q15)

Variable	Level	Base	0-1 day	2-3 days	4-5 days	6-7 days	P-value		
							Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Age group	18-24	277	80.9%	13.7%	1.7%	3.7%			0.000
	25-34	468	84.9%	10.2%	1.6%	3.3%			
	35-44	516	82.5%	11.3%	2.3%	4.0%			
	45-54	554	88.7%	7.3%	1.7%	2.3%			
	55-64	341	91.1%	4.7%	1.4%	2.8%			
Marital status	Never married	760	83.6%	11.2%	1.9%	3.3%		0.004	
	Married	1306	86.4%	8.8%	1.7%	3.1%			
	Divorced/ Separated/ Widowed	111	93.0%	2.5%	1.9%	2.6%			
Educational attainment	Primary or below	240	89.0%	8.0%	1.7%	1.3%			0.000
	Had not completed secondary	357	92.3%	6.5%	0.4%	0.8%			
	Completed secondary (F5)	575	86.2%	9.5%	1.4%	2.9%			
	Matriculation	207	85.1%	8.2%	1.5%	5.2%			
	Tertiary (Non-degree, degree or above)	804	81.8%	11.1%	2.7%	4.4%			
Occupation	Managerial/ Professional worker	534	81.0%	11.6%	2.6%	4.8%		0.001	
	Clerk	303	89.5%	7.3%	1.6%	1.6%			
	Service worker	207	84.7%	10.0%	2.3%	2.9%			
	Blue collar worker	304	89.0%	9.8%	0.3%	0.9%			
	Not working	796	86.5%	8.1%	1.7%	3.7%			
Monthly household income	Below $8,000	168	87.0%	7.4%	1.3%	4.3%			0.021
	$8,000 - $13,999	315	85.0%	10.7%	2.8%	1.5%			
	$14,000 - $19,999	172	88.7%	8.3%	0.7%	2.3%			
	$20,000 - $39,999	611	88.2%	8.2%	1.9%	1.7%			
	$40,000 or above	446	81.7%	11.9%	2.1%	4.3%			

4.4.2 Frequency of consuming fruit per week

The frequency of fruit consumption (not including fruit juice) is associated significantly with respondents' gender, age, marital status, educational attainment, occupation and type of living quarters.

The proportion of people consuming fruit 6-7 days a week was higher among female respondents (59.3%), married respondents (61.2%), those who had not completed secondary education or below (ranged from 59.0% to 68.8%), non-working respondents (61.4%) and those living in private housing (56.9%). Also, the older the respondents, the more likely than their counterparts that they consumed fruits 6-7 days a week (Table 4.4.2).

Table 4.4.2: Number of days per week in which respondents consumed fruit (not including fruit juice) (Q13a)

Variable	Level	Base	0-1 day	2-3 days	4-5 days	6-7 days	P-value		
							Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	1001	13.5%	24.5%	13.8%	48.2%		0.000	
	Female	1180	6.0%	18.3%	16.4%	59.3%			
Age group	18-24	277	12.6%	27.1%	19.4%	40.9%			0.000
	25-34	468	13.0%	29.3%	15.8%	41.9%			
	35-44	516	7.3%	23.9%	16.2%	52.7%			
	45-54	554	7.9%	17.5%	13.8%	60.9%			
	55-64	340	7.2%	8.0%	12.1%	72.7%			
Marital status	Never married	758	15.2%	27.6%	15.1%	42.1%		0.000	
	Married	1306	5.5%	17.9%	15.4%	61.2%			
	Divorced/ Separated/ Widowed	111	16.1%	16.7%	14.0%	53.1%			
Educational attainment	Primary or below	240	8.3%	14.6%	8.2%	68.8%			0.000
	Had not completed secondary	356	9.0%	19.4%	12.6%	59.0%			
	Completed secondary (F5)	575	10.1%	21.6%	16.1%	52.1%			
	Matriculation	205	10.3%	26.4%	13.8%	49.5%			
	Tertiary (Non-degree, degree or above)	804	9.2%	22.2%	18.1%	50.5%			
Occupation	Managerial/ Professional worker	534	9.8%	24.3%	14.2%	51.7%		0.000	
	Clerk	302	13.0%	25.1%	20.6%	41.3%			
	Service worker	208	11.5%	25.0%	15.4%	48.1%			
	Blue collar worker	302	11.7%	22.1%	10.7%	55.5%			
	Not working	796	6.2%	16.7%	15.7%	61.4%			
Type of living quarters	Public rental flats	700	9.3%	26.2%	14.1%	50.5%		0.037	
	Subsidized sale flats	316	11.7%	23.1%	12.7%	52.5%			
	Private housing	1143	9.0%	17.6%	16.5%	56.9%			

4.4.3 Frequency of consuming vegetables per week

The frequency of vegetable consumption (not including vegetable juice) is associated significantly with respondents' gender, age, marital status, education level and occupation.

A relatively higher proportion of female respondents (86.4%), those aged 45-64 (ranged from 85.0% to 91.7%), married respondents (87.4%), those with education level of primary or below (90.7%) and non-working respondents (87.9%) had consumed vegetables 6-7 days a week when compared with their respective counterparts (Table 4.4.3).

Table 4.4.3: Number of days per week in which respondents consumed vegetables (not including vegetable juice) (Q14a)

Variable	Level	Base	0-1 day	2-3 days	4-5 days	6-7 days	P-value		
							Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	1002	2.7%	7.2%	10.7%	79.3%		0.000	
	Female	1183	1.1%	3.9%	8.6%	86.4%			
Age group	18-24	277	2.6%	4.6%	10.5%	82.3%			0.000
	25-34	468	2.9%	8.3%	13.0%	75.8%			
	35-44	517	2.0%	6.3%	9.1%	82.5%			
	45-54	555	0.9%	4.3%	9.8%	85.0%			
	55-64	341	0.8%	3.1%	4.4%	91.7%			
Marital status	Never married	760	3.0%	7.6%	13.1%	76.3%		0.000	
	Married	1308	1.1%	4.2%	7.3%	87.4%			
	Divorced/ Separated/ Widowed	111	1.8%	5.8%	11.8%	80.6%			
Educational attainment	Primary or below	240	0.8%	2.1%	6.4%	90.7%			0.003
	Had not completed secondary	357	2.5%	7.0%	7.0%	83.5%			
	Completed secondary (F5)	577	2.2%	5.9%	10.3%	81.7%			
	Matriculation	207	1.4%	5.2%	8.3%	85.1%			
	Tertiary (Non-degree, degree or above)	804	1.7%	5.5%	11.5%	81.4%			
Occupation	Managerial/ Professional worker	534	0.7%	4.7%	11.5%	83.1%		0.000	
	Clerk	303	1.2%	10.1%	11.9%	76.8%			
	Service worker	208	7.2%	7.8%	12.0%	73.0%			
	Blue collar worker	304	1.6%	5.5%	8.6%	84.3%			
	Not working	797	1.4%	3.7%	7.0%	87.9%			

4.4.4 Amount of fruit and vegetables consumed per day

From this survey, the average number of servings of fruit and vegetables consumed per day is associated significantly with respondents' gender, age, marital status, occupation and type of living quarters.

4.4.4.1 Number of servings of fruit and vegetables consumed per day (excluding fruit/vegetable juice consumption) [31]

Female respondents (25.6%), those aged 55-64 (28.8%), married respondents (22.7%), non-working respondents (24.4%) and those living in private housing (22.9%) were more likely than their respective counterparts to have consumed 5 or more servings of fruit and vegetables per day (excluding fruit/vegetable juice consumption) (Table 4.4.4.1).

Table 4.4.4.1: Number of servings of fruit and vegetables consumed per day (excluding fruit and vegetable juice) (Q13a, Q13b, Q14a & Q14b)

Variable	Level	Base	Less than 5 servings	Greater than or equal to 5 servings	P-value		
					Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	994	85.9%	14.1%	0.000		
	Female	1172	74.4%	25.6%			
Age group	18-24	276	84.0%	16.0%		0.000	
	25-34	465	86.2%	13.8%			
	35-44	515	80.7%	19.3%			
	45-54	551	76.8%	23.2%			
	55-64	333	71.2%	28.8%			
Marital status	Never married	758	83.8%	16.2%	0.002		
	Married	1291	77.3%	22.7%			
	Divorced/ Separated/ Widowed	111	80.7%	19.3%			
Occupation	Managerial/ Professional worker	531	80.2%	19.8%	0.004		
	Clerk	300	85.7%	14.3%			
	Service worker	208	81.5%	18.5%			
	Blue collar worker	300	80.9%	19.1%			
	Not working	790	75.6%	24.4%			
Type of living quarters	Public rental flats	698	81.9%	18.1%	0.005		
	Subsidized sale flats	315	84.1%	15.9%			
	Private housing	1132	77.1%	22.9%			

[31] Total average number of servings: average no. of fruit eaten per day + (average no. of bowls of vegetables eaten per day x 2)

4.4.4.2 Number of servings of fruit and vegetables consumed per day (including fruit/vegetable juice consumption)[32]

Female respondents (26.4%), married (23.4%) or divorced/ separated/ widowed respondents (21.9%), non-working respondents (25.1%) and those living in private housing (23.7%) were more likely than their respective counterparts to have consumed 5 or more servings of fruit and vegetables per day (including fruit/ vegetable juice consumption). Also, the older the respondents, the more likely than their counterparts to have consumed 5 or more servings (Table 4.4.4.2).

Table 4.4.4.2: Number of servings of fruit and vegetables consumed per day (including fruit and vegetable juice) (Q13a, Q13b, Q14a, Q14b & Q15)

Variable	Level	Base	Less than 5 servings	Greater than or equal to 5 servings	P-value		
					Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	993	85.3%	14.7%	0.000		
	Female	1171	73.6%	26.4%			
Age group	18-24	276	83.2%	16.8%		0.000	
	25-34	465	85.2%	14.8%			
	35-44	514	79.6%	20.4%			
	45-54	550	76.5%	23.5%			
	55-64	333	70.7%	29.3%			
Marital status	Never married	758	83.1%	16.9%	0.002		
	Married	1289	76.6%	23.4%			
	Divorced/ Separated/ Widowed	111	78.1%	21.9%			
Occupation	Managerial/ Professional worker	531	79.0%	21.0%	0.003		
	Clerk	300	85.2%	14.8%			
	Service worker	207	81.0%	19.0%			
	Blue collar worker	300	80.4%	19.6%			
	Not working	789	74.9%	25.1%			
Type of living quarters	Public rental flats	698	81.6%	18.4%	0.006		
	Subsidized sale flats	313	82.7%	17.3%			
	Private housing	1131	76.3%	23.7%			

[32] Total average number of servings: average no. of fruit eaten per day + (average no. of bowls of vegetables eaten per day x 2) + (average no. of days per week having drunk one cups or more of fruit or vegetable juice divided by 7)

4.5 Smoking habits

4.5.1 Smoking habits

Smoking habit is associated significantly with respondents' gender, marital status, education level and occupation.

A relatively higher proportion of male respondents (22.5%), divorced/ separated/ widowed respondents (23.7%), those who had not completed secondary education (24.7%) and service workers (28.5%) were current smokers when compared with their respective counterparts (Table 4.5.1).

Table 4.5.1: Smoking habits (Q16a)

Variable	Level	Base	Yes, but not now	Yes, and still smoking	Never	P-value		
						Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	1002	15.1%	22.5%	62.3%	0.000		
	Female	1183	5.8%	7.0%	87.2%			
Marital status	Never married	760	7.0%	15.3%	77.7%	0.000		
	Married	1308	12.2%	12.7%	75.1%			
	Divorced/ Separated/ Widowed	111	5.9%	23.7%	70.4%			
Educational attainment	Primary or below	240	9.3%	12.9%	77.9%		0.000	
	Had not completed secondary	357	13.7%	24.7%	61.5%			
	Completed secondary (F5)	577	8.8%	17.2%	74.1%			
	Matriculation	207	13.4%	10.7%	75.9%			
	Tertiary (Non-degree, degree or above)	804	8.8%	8.5%	82.7%			
Occupation	Managerial/ Professional worker	534	8.7%	12.6%	78.7%	0.000		
	Clerk	303	6.2%	10.8%	83.0%			
	Service worker	208	13.8%	28.5%	57.8%			
	Blue collar worker	304	16.5%	23.9%	59.6%			
	Not working	797	9.0%	9.1%	81.9%			

4.5.2 Length of time abstained from smoking

The length of time abstained from smoking for respondents who were past smokers is associated significantly with their age and marital status.

The older the respondents, the more likely that they had abstained from smoking for more than l year. Also, divorced/ separated/ widowed respondents (100.0%)[33] and married respondents (88.4%) were more likely to abstain from smoking for more than l year than their respective counterparts (Table 4.5.2).

Table 4.5.2: Length of time abstained from smoking (Q16b)

Variable	Level	Base	Had abstained for less than 1 month	Had abstained for 1 month to l year	Had abstained for more than l year	P-value		
						Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Age group	18-24	16	0.0%	44.8%	55.2%			0.000
	25-34	42	3.8%	32.8%	63.4%			
	35-44	59	0.0%	9.6%	90.4%			
	45-54	59	0.0%	8.4%	91.6%			
	55-64	43	0.0%	8.3%	91.7%			
Marital status	Never married	52	3.0%	31.6%	65.4%		0.001	
	Married	158	0.0%	11.6%	88.4%			
	Divorced/ Separated/ Widowed	7	0.0%	0.0%	100.0%			

[33] The subgroup was subject to a very small sample size.

4.5.3 Amount of cigarettes consumed

The amount of cigarettes consumed is associated significantly with current smokers' gender, age, educational attainment, occupation and type of living quarters.

A relatively higher proportion of male respondents (11.8%), respondents aged 45-64 (ranged from 12.5% to 13.3%), those with primary education level or below (13.3%) or with matriculation education level (13.0%), blue collar workers (15.3%) and those living in subsidized sale flats (15.1%) reported that they smoked more than 20 cigarettes per day (Table 4.5.3).

Table 4.5.3: Average number of cigarettes which the respondents smoked per day (Q16c)

Variable	Level	Base	Less than 1 cigarette per day now	1-10 cigarettes per day now	11-20 cigarettes per day now	More than 20 cigarettes per day now	P-value		
							Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	225	1.5%	47.9%	38.7%	11.8%		0.000	
	Female	83	9.5%	78.4%	10.6%	1.6%			
Age group	18-24	16	10.0%	74.7%	10.2%	5.1%			0.000
	25-34	85	5.1%	72.2%	18.7%	4.0%			
	35-44	82	4.9%	61.3%	24.2%	9.5%			
	45-54	85	1.5%	42.6%	43.5%	12.5%			
	55-64	41	0.0%	33.0%	53.7%	13.3%			
Educational attainment	Primary or below	31	2.6%	46.0%	38.1%	13.3%			0.001
	Had not completed secondary	88	1.5%	45.1%	40.6%	12.8%			
	Completed secondary (F5)	98	2.2%	66.4%	26.4%	5.0%			
	Matriculation	22	0.0%	47.6%	39.4%	13.0%			
	Tertiary (Non-degree, degree or above)	68	10.2%	62.8%	20.0%	6.9%			
Occupation	Managerial/ Professional worker	68	3.9%	74.1%	14.9%	7.0%		0.007	
	Clerk	33	7.7%	59.7%	24.0%	8.6%			
	Service worker	59	0.0%	66.3%	29.7%	3.9%			
	Blue collar worker	73	1.8%	43.1%	39.8%	15.3%			
	Not working	71	4.8%	43.7%	44.1%	7.4%			
Type of living quarters	Public rental flats	113	3.0%	61.4%	27.0%	8.5%		0.014	
	Subsidized sale flats	38	0.0%	36.8%	48.1%	15.1%			
	Private housing	151	4.3%	57.2%	30.2%	8.4%			

4.6 Pattern of alcohol consumption

4.6.1 Consumption of alcohol

Consumption of alcohol is associated significantly with respondents' gender, age, marital status, educational attainment, occupation, monthly household income and type of living quarters.

Male respondents (48.7%), those aged 25-34 (40.4%), never married respondents (41.4%), those with tertiary education level or above (41.6%), service workers (47.0%) and managerial/ professional workers (43.9%) and those living at subsidized sale flats (40.3%) and private housing (38.1%) were more likely than their respective counterparts to have consumed at least one alcoholic drink during the month prior to the survey. Also, the higher the monthly household income of the respondents, the more likely that they had consumed at least one alcoholic drink during the month prior to the survey when compared with their counterparts (Table 4.6.1).

Table 4.6.1: Ever had at least one alcoholic drink (Q17a)

Variable	Level		Yes, during the last month	Yes, during the previous 2 to 12 months	Yes, more than 12 months ago	No	P-value		
							Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male		48.7%	20.4%	14.0%	16.9%	0.000		
	Female		25.8%	18.2%	16.2%	39.9%			
Age group	18-24		37.1%	27.7%	14.2%	21.0%		0.000	
	25-34		40.4%	24.2%	14.9%	20.4%			
	35-44		34.8%	19.1%	17.6%	28.4%			
	45-54		38.0%	15.2%	13.8%	33.0%			
	55-64		31.5%	11.3%	15.2%	41.9%			
Marital status	Never married		41.4%	25.5%	13.4%	19.7%	0.000		
	Married		33.9%	15.7%	16.1%	34.4%			
	Divorced/ Separated/ Widowed		32.1%	14.4%	17.5%	36.0%			
Educational attainment	Primary or below		26.8%	12.5%	13.7%	47.1%		0.000	
	Had not completed secondary		35.4%	12.5%	16.6%	35.5%			
	Completed secondary (F5)		35.3%	20.0%	12.6%	32.1%			
	Matriculation		31.4%	21.3%	16.8%	30.4%			
	Tertiary (Non-degree, degree or above)		41.6%	23.0%	16.4%	19.1%			

Occupation	Managerial/ Professional worker	534	43.9%	22.6%	16.3%	17.2%	0.000		
	Clerk	303	36.2%	22.4%	12.5%	28.9%			
	Service worker	208	47.0%	19.3%	11.5%	22.1%			
	Blue collar worker	304	38.7%	17.6%	13.5%	30.2%			
	Not working	797	27.8%	16.8%	16.8%	38.6%			
Monthly household income	Below $8,000	168	23.1%	15.5%	14.9%	46.5%		0.000	
	$8,000 - $13,999	315	27.3%	18.0%	16.1%	38.7%			
	$14,000 - $19,999	173	35.4%	17.7%	14.4%	32.4%			
	$20,000 - $39,999	611	37.7%	22.8%	15.0%	24.5%			
	$40,000 or above	446	45.0%	19.5%	16.0%	19.5%			
Type of living quarters	Public rental flats	702	31.8%	17.6%	17.2%	33.5%	0.008		
	Subsidized sale flats	316	40.3%	19.9%	13.0%	26.8%			
	Private housing	1145	38.1%	19.9%	14.8%	27.2%			

4.6.2 Frequency of alcohol consumption

Frequency of alcohol consumption per week during the thirty days prior to the survey is associated significantly with the drinkers' gender, age, marital status, educational attainment and occupation.[34]

A relatively higher proportion of male respondents (14.8%), those with primary education level or below (30.1%), married respondents (14.0%) and blue collar workers (24.8%) reported that they drank 6 days or more per week when compared with their respective counterparts. Also, the older the respondents, the more likely that they drank 6 days or more per week than their counterparts (Table 4.6.2).

Table 4.6.2: Frequency of consuming at least one alcoholic drink during the last thirty days prior to the survey (Q17b)

Variable	Level	Base	6 days or more per week	4-5 days per week	2-3 days per week	1 day or less per week	P-value		
							Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	481	14.8%	6.7%	14.2%	64.3%		0.000	
	Female	300	3.3%	1.6%	9.8%	85.4%			

[34] Drinkers are defined as those respondents who had ever had at least one alcoholic drink during the thirty days prior to the survey.

Age group	18-24	101	1.6%	1.6%	11.7%	85.1%			0.000
	25-34	186	4.4%	3.0%	12.4%	80.2%			
	35-44	175	6.8%	4.9%	11.7%	76.6%			
	45-54	209	15.2%	5.2%	14.7%	64.9%			
	55-64	107	25.8%	9.5%	11.2%	53.5%			
Marital status	Never married	310	5.3%	4.2%	12.3%	78.2%		0.012	
	Married	437	14.0%	5.4%	12.2%	68.4%			
	Divorced/ Separated/ Widowed	34	10.6%	0.0%	18.4%	71.0%			
Educational attainment	Primary or below	64	30.1%	6.3%	11.1%	52.5%			0.000
	Had not completed secondary	123	19.5%	6.1%	11.8%	62.5%			
	Completed secondary (F5)	199	6.6%	8.0%	14.0%	71.4%			
	Matriculation	65	4.4%	5.9%	19.4%	70.3%			
	Tertiary (Non-degree, degree or above)	330	6.6%	1.6%	10.9%	80.9%			
Occupation	Managerial/ Professional worker	229	8.3%	3.0%	15.3%	73.4%		0.000	
	Clerk	110	4.8%	2.8%	12.6%	79.8%			
	Service worker	97	7.3%	5.9%	9.0%	77.9%			
	Blue collar worker	115	24.8%	5.7%	14.2%	55.2%			
	Not working	218	8.5%	6.6%	9.9%	75.0%			

4.6.3 Amount of alcoholic drinks consumed

The average number of standard drinks consumed on the days they drank alcohol during the thirty days prior to the survey is associated significantly with the drinkers' gender, age, marital status and occupation.

A relatively higher proportion of male respondents (12.3%), never married respondents (14.4%) and service workers (14.9%) reported that they drank 5-24 units on average on the days they drank alcohol during the thirty days prior to the survey than their respective counterparts. Also, the younger the respondents, the more likely that they drank 5-24 units on average on the day they drank alcohol when compared with their counterparts. (Table 4.6.3).

Table 4.6.3: Average number of standard drinks consumed on the days they drank alcohol (Q17c)

Variable	Level	Base	Less than 3 units	3-<5 units	5-24 units	P-value		
						Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	477	64.6%	23.1%	12.3%		0.000	
	Female	298	80.6%	11.8%	7.6%			
Age group	18-24	98	61.3%	21.8%	17.0%			0.000
	25-34	184	63.7%	21.9%	14.4%			
	35-44	175	71.7%	18.3%	10.0%			
	45-54	208	78.2%	15.2%	6.7%			
	55-64	107	75.0%	18.5%	6.4%			
Marital status	Never married	302	64.7%	20.9%	14.4%		0.000	
	Married	438	73.9%	18.3%	7.8%			
	Divorced/ Separated/ Widowed	35	84.1%	5.9%	9.9%			
Occupation	Managerial/ Professional worker	230	69.1%	20.5%	10.4%		0.012	
	Clerk	108	74.5%	16.7%	8.8%			
	Service worker	95	61.0%	24.1%	14.9%			
	Blue collar worker	115	65.7%	23.2%	11.1%			
	Not working	215	77.4%	13.5%	9.2%			

4.6.4 Consumption of at least 5 glasses/cans of alcohol on one single occasion (Binge drinking)

Binge drinking during the thirty days prior to the survey is associated significantly with the drinkers' gender, age, marital status and occupation.

A relatively higher proportion of male respondents (28.5%), those aged 18-34 (ranged from 27.7% to 29.9%), never married respondents (29.2%), blue collar workers (30.7%) and service workers (32.1%) reported that they had engaged in binge drinking during the thirty days prior to the survey when compared with their respective counterparts (Table 4.6.4).

Table 4.6.4: Consumption of at least 5 glasses/cans of alcohol on one single occasion during the thirty days prior to the survey (Q17d)

Variable	Level	Base	Yes	No	P-value		
					Chi-Square Test	Kruskal Wallis test	Rank Correlation
Gender	Male	485	28.5%	71.5%	0.000		
	Female	305	14.6%	85.4%			

Age group	18-24	103	27.7%	72.3%		0.000	
	25-34	187	29.9%	70.1%			
	35-44	179	20.7%	79.3%			
	45-54	211	20.9%	79.1%			
	55-64	108	16.2%	83.8%			
Marital status	Never married	313	29.2%	70.8%	0.005		
	Married	442	19.3%	80.7%			
	Divorced/ Separated/ Widowed	36	17.6%	82.4%			
Occupation	Managerial/ Professional worker	234	21.2%	78.8%	0.020		
	Clerk	110	20.9%	79.1%			
	Service worker	98	32.1%	67.9%			
	Blue collar worker	116	30.7%	69.3%			
	Not working	220	18.5%	81.5%			

4.6.5 Frequency of binge drinking

The frequency of binge drinking is associated with the binge drinkers' educational attainment.

Binge drinkers who had not completed secondary education (60.5%) were more likely than their counterparts to have engaged in binge drinking three times or more during the thirty days prior to the survey (Table 4.6.5).

Table 4.6.5: Frequency of binge drinking during the thirty days prior to the survey (Q17e)

Variable	Level	Base	Once	Twice	Three times or more	P-value		
						Chi-Square Test	Kruskal Wallis test	Rank Correlation
Educational attainment	Primary or below	13	34.3%	32.3%	33.4%			0.033
	Had not completed secondary	35	23.2%	16.4%	60.5%			
	Completed secondary (F5)	53	41.4%	16.2%	42.4%			
	Matriculation	16	39.1%	19.4%	41.5%			
	Tertiary (Non-degree, degree or above)	66	47.3%	21.8%	30.9%			

4.6.6 Having drunk so much and exhibited signs of drunkenness

Having drunk so much and exhibited signs of drunkenness during the thirty days prior to the survey is associated significantly with the drinkers' age and marital status.

A relatively higher proportion of respondents aged 18-34 (ranged from 20.0% to 21.9%) and never married respondents (21.5%) reported that they had drunk so much and exhibited signs of drunkenness during the thirty days prior to the survey when compared with their respective counterparts (Table 4.6.6).

Table 4.6.6: Having drunk so much and exhibited signs of drunkenness during the thirty days prior to the survey (Q17f)

Variable	Level	Base	Yes	No	P-value		
					Chi-Square Test	Kruskal Wallis test	Rank Correlation
Age group	18-24	103	20.0%	80.0%		0.000	
	25-34	187	21.9%	78.1%			
	35-44	179	12.1%	87.9%			
	45-54	211	9.6%	90.4%			
	55-64	108	8.2%	91.8%			
Marital status	Never married	313	21.5%	78.5%	0.000		
	Married	442	9.8%	90.2%			
	Divorced/ Separated/ Widowed	36	5.7%	94.3%			

4.7 Level of psychological distress

4.7.1 Severe psychological distress

Occurrence of having severe psychological distress during the thirty days prior to the survey is associated significantly with respondents' marital status, monthly household income and type of living quarters.

Divorced/ separated/ widowed respondents (10.8%) and those living in public rental flats (9.3%) were more likely to have severe psychological distress during the thirty days prior to the survey when compared with their respective counterparts. Also, the lower the monthly household income of the respondents, the more likely they were to have severe psychological distress during the thirty days prior to the survey when compared with their counterparts (Table 4.7.1).

Table 4.7.1: Occurrence of having severe psychological distress during the thirty days prior to the survey (Q18a-Q18f)

Variable	Level	Base	No severe psychological distress	Severe psychological distress	P-value		
					Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Marital status	Never married	758	92.3%	7.7%	0.034		
	Married	1304	94.4%	5.6%			
	Divorced/ Separated/ Widowed	111	89.2%	10.8%			
Monthly household income	Below $8,000	168	86.4%	13.6%		0.000	
	$8,000 - $13,999	312	92.0%	8.0%			
	$14,000 - $19,999	173	93.7%	6.3%			
	$20,000 - $39,999	611	94.5%	5.5%			
	$40,000 or above	446	96.3%	3.7%			
Type of living quarters	Public rental flats	701	90.7%	9.3%	0.002		
	Subsidized sale flats	315	93.5%	6.5%			
	Private housing	1141	94.9%	5.1%			

4.7.2 Health consultation for psychological distress or stress

Frequency of seeing a doctor or other health professionals because of any of the six psychological distress symptoms described in section 3.7.1 during the thirty days prior to the survey is associated significantly with respondents' gender and monthly household income.

Female respondents (2.7%) were more likely to have consulted a health professional because of the six psychological distress symptoms at least once during the thirty days prior to the survey when compared with male respondents. Also, the lower the monthly household income of the respondents, the more likely they were to have consulted a health professional for the psychological distress or stress at least once during the thirty days prior to the survey when compared with their counterparts (Table 4.7.2).

Table 4.7.2: Frequency of consulting health professional because of psychological distress during the thirty days prior to the survey (Q19)

Variable	Level	Base	None	At least once	P-value		
					Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	861	99.0%	1.0%	0.006		
	Female	1038	97.3%	2.7%			
Monthly household income	Below $8,000	133	96.9%	3.1%		0.014	
	$8,000 - $13,999	268	97.2%	2.8%			
	$14,000 - $19,999	149	97.4%	2.6%			
	$20,000 - $39,999	539	99.1%	0.9%			
	$40,000 or above	398	99.1%	0.9%			

4.8 Sleeping habits

4.8.1 Hours of sleeping

Number of hours of sleeping during the thirty days prior to the survey is associated significantly with respondents' age, marital status and occupation.

A relatively higher proportion of respondents aged 45-64 (ranged from 11.9% to 13.8%), divorced/ separated/ widowed respondents (17.8%), service workers (14.2%) and blue collar workers (13.0%) reported that they slept less than 6 hours per day on average during the thirty days prior to the survey when compared with their respective counterparts (Table 4.8.1).

Table 4.8.1: Average number of hours that respondents slept per day (Q20)

Variable	Level	Base	Less than 6 hours	6-8 hours	More than 8 hours	P-value		
						Chi-Square Test	Kruskal Wallis test	Rank Correlation
Age group	18-24	277	8.2%	79.8%	12.0%			0.002
	25-34	466	8.5%	83.4%	8.1%			
	35-44	516	10.0%	83.0%	6.9%			
	45-54	555	11.9%	80.2%	7.9%			
	55-64	341	13.8%	79.0%	7.1%			
Marital status	Never married	759	8.8%	81.9%	9.3%		0.019	
	Married	1305	10.8%	81.9%	7.3%			
	Divorced/ Separated/ Widowed	111	17.8%	73.6%	8.6%			
Occupation	Managerial/ Professional worker	533	9.4%	85.4%	5.2%		0.005	
	Clerk	303	10.5%	85.1%	4.4%			
	Service worker	208	14.2%	76.6%	9.2%			
	Blue collar worker	304	13.0%	80.2%	6.8%			
	Not working	795	9.6%	78.9%	11.5%			

4.9 Social support

4.9.1 Number of close relatives or friends

Number of close relatives or friends is associated significantly with respondents' gender, age, marital status, educational attainment, occupation, monthly household income and type of living quarters.

A relatively higher proportion of male respondents (15.6%), divorced/ separated/ widowed respondents (27.9%), blue collar workers (19.0%), respondents living in public rental flats (14.5%) and subsidized sale flats (14.1%) had no close relatives or friends that they could talk to about a private matter, to call on for emotional support or financial assistance when compared with their respective counterparts. Also, the older, the lower in education level and monthly household income of the respondents, the more likely that they did not have any close relatives or friends whom they could talk to about private matter, call on for emotional support or financial assistance when compared with their respective counterparts (Table 4.9.1).

Table 4.9.1: Number of close relatives or friend (Q21)

Variable	Level	Base	None	1-2	3-4	5-6	7 or more	P-value		
								Chi-Square Test	Kruskal Wallis test	Rank Correlation
Gender	Male	976	15.6%	28.4%	27.9%	15.4%	12.7%		0.000	
	Female	1159	8.4%	23.6%	29.6%	21.0%	17.5%			
Age group	18-24	277	4.9%	14.0%	32.2%	28.1%	20.8%			0.000
	25-34	462	5.2%	15.5%	32.9%	23.1%	23.3%			
	35-44	509	8.2%	30.3%	27.0%	18.3%	16.1%			
	45-54	541	16.8%	33.7%	27.0%	13.0%	9.5%			
	55-64	326	23.7%	29.2%	25.4%	13.2%	8.6%			
Marital status	Never married	753	7.1%	20.9%	31.1%	22.4%	18.5%		0.000	
	Married	1269	13.0%	28.3%	28.4%	16.7%	13.6%			
	Divorced/ Separated/ Widowed	108	27.9%	28.7%	17.3%	12.6%	13.5%			
Educational attainment	Primary or below	227	24.5%	31.7%	27.3%	8.8%	7.7%			0.000
	Had not completed secondary	344	16.6%	33.2%	26.0%	10.7%	13.4%			
	Completed secondary (F5)	568	10.8%	27.9%	30.0%	17.5%	13.8%			
	Matriculation	204	9.5%	22.9%	33.0%	22.9%	11.7%			
	Tertiary (Non-degree, degree or above)	793	7.1%	20.0%	28.5%	24.1%	20.3%			

Occupation	Managerial/ Professional worker	524	7.7%	23.0%	26.7%	22.1%	20.5%		0.000	
	Clerk	301	4.7%	27.2%	31.8%	21.8%	14.6%			
	Service worker	204	12.2%	26.5%	30.8%	17.2%	13.3%			
	Blue collar worker	295	19.0%	33.0%	27.3%	11.2%	9.4%			
	Not working	776	13.9%	24.8%	28.7%	17.3%	15.3%			
Monthly household income	Below $8,000	158	28.3%	31.9%	23.3%	9.3%	7.3%			0.000
	$8,000 - $13,999	309	15.8%	27.3%	25.1%	17.4%	14.5%			
	$14,000 - $19,999	172	8.2%	27.8%	31.4%	14.1%	18.5%			
	$20,000 - $39,999	605	8.0%	27.7%	30.0%	19.6%	14.6%			
	$40,000 or above	440	5.3%	21.9%	31.4%	20.7%	20.6%			
Type of living quarters	Public rental flats	682	14.5%	28.1%	28.5%	16.6%	12.3%		0.000	
	Subsidized sale flats	308	14.1%	28.9%	23.4%	19.9%	13.8%			
	Private housing	1124	9.3%	23.6%	30.3%	19.2%	17.5%			

4.10 Meat consumption

4.10.1 Frequency of consuming red meat

Frequency of consuming red meat is associated significantly with respondents' gender, age, marital status and monthly household income.

A relatively higher proportion of female respondents (9.3%), those aged 55-64 (13.1%), divorced/ separated/ widowed respondents (12.8%) and those with monthly household income below $8,000 (17.5%) consumed red meat 1 day or less per week on average during the thirty days prior to the survey when compared with their respective counterparts (Table 4.10.1).

Table 4.10.1: Average number of days per week of consuming red meat (Q22a)

Variable	Level	Base	6 days or more per week	4-5 days per week	2-3 days per week	1 day or less per week	P-value		
							Chi-Square Test	Kruskal Wallis test	Rank Correlation
Gender	Male	1002	52.4%	20.0%	21.4%	6.1%		0.031	
	Female	1178	49.6%	21.3%	19.8%	9.3%			
Age group	18-24	276	51.9%	23.9%	20.5%	3.7%			0.000
	25-34	465	58.3%	22.5%	14.5%	4.7%			
	35-44	517	51.9%	17.7%	21.3%	9.0%			
	45-54	555	49.3%	21.1%	21.4%	8.2%			
	55-64	340	41.8%	20.2%	25.0%	13.1%			
Marital status	Never married	758	52.9%	21.9%	18.6%	6.6%		0.004	
	Married	1305	50.9%	20.3%	20.7%	8.1%			
	Divorced/ Separated/ Widowed	111	39.3%	18.8%	29.2%	12.8%			
Monthly household income	Below $8,000	167	39.2%	21.2%	22.2%	17.5%			0.007
	$8,000 - $13,999	315	51.4%	19.8%	23.7%	5.1%			
	$14,000 - $19,999	173	57.5%	22.7%	14.2%	5.6%			
	$20,000 - $39,999	610	51.4%	23.6%	17.5%	7.5%			
	$40,000 or above	446	55.0%	18.0%	21.9%	5.1%			

4.10.2 Frequency of consuming white meat

Frequency of consuming white meat is associated significantly with respondents' marital status.

A relatively higher proportion of divorced/ separated/ widowed respondents (14.7%) consumed white meat 1 day or less per week on average during the thirty days prior to the survey when compared with their counterparts (Table 4.10.2).

Table 4.10.2: Average number of days per week of consuming white meat (Q23a)

Variable	Level	Base	6 days or more per week	4-5 days per week	2-3 days per week	1 day or less per week	P-value		
							Chi-Square Test	Kruskal Wallis test	Rank Correlation
Marital status	Never married	760	37.4%	23.8%	31.2%	7.6%		0.020	
	Married	1304	37.5%	24.3%	31.1%	7.2%			
	Divorced/ Separated/ Widowed	111	27.8%	23.4%	34.1%	14.7%			

4.10.3 Daily average amount of red meat consumed

Daily average amount of red meat consumed is associated significantly with respondents' gender, age, marital status, education level, occupation and monthly household income.

Female respondents (47.0%), those aged 55-64 (56.1%), divorced/ separated/ widowed respondents (50.5%), non-working respondents (47.0%) and those with monthly household income below $8,000 (54.6%) were more likely to have consumed less than 2 taels of red meat per day on average during the thirty days prior to the survey when compared with their respective counterparts. Also, the lower the education level of the respondents, the more likely that they were to have consumed less than 2 taels of red meat per day on average when compared with their counterparts (Table 4.10.3).

Table 4.10.3: Daily average amount of red meat consumped (Q22a & Q22b)

Variable	Level	Base	Less than 2 taels	2-4 taels	More than 4 taels	P-value		
						Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	994	38.0%	41.2%	20.9%		0.000	
	Female	1173	47.0%	40.9%	12.0%			
Age group	18-24	274	31.5%	40.9%	27.5%			0.000
	25-34	462	31.1%	43.2%	25.7%			
	35-44	517	45.2%	41.1%	13.7%			
	45-54	553	47.8%	41.3%	11.0%			
	55-64	336	56.1%	38.1%	5.8%			

Marital status	Never married	752	34.8%	40.1%	25.1%		0.000	
	Married	1299	46.8%	41.7%	11.5%			
	Divorced/ Separated/ Widowed	111	50.5%	40.9%	8.6%			
Educational attainment	Primary or below	236	55.1%	38.2%	6.6%			0.000
	Had not completed secondary	353	48.1%	40.8%	11.2%			
	Completed secondary (F5)	575	40.4%	40.9%	18.7%			
	Matriculation	207	40.4%	43.0%	16.6%			
	Tertiary (Non-degree, degree or above)	797	39.4%	41.5%	19.1%			
Occupation	Managerial/ Professional worker	530	41.4%	41.5%	17.1%		0.039	
	Clerk	303	38.3%	42.0%	19.7%			
	Service worker	207	36.7%	42.4%	20.9%			
	Blue collar worker	299	43.7%	42.9%	13.4%			
	Not working	792	47.0%	39.7%	13.3%			
Monthly household income	Below $8,000	166	54.6%	37.6%	7.8%			0.000
	$8,000 - $13,999	314	47.1%	38.2%	14.7%			
	$14,000 - $19,999	171	39.4%	44.4%	16.2%			
	$20,000 - $39,999	610	39.0%	45.8%	15.2%			
	$40,000 or above	446	39.7%	40.7%	19.6%			

4.10.4 Daily average amount of white meat consumed

Daily average amount of white meat consumed is associated significantly with respondents' gender, age, marital status, education level, monthly household income and type of living quarters.

Female respondents (53.7%), those aged 35-54 (ranged from 54.0% to 55.2%), divorced/ separated/ widowed respondents (58.3%), those with education level at matriculation (58.1%), those with monthly household income below $14,000 (ranged from 55.3% to 58.4%) and those living in public rental flats (56.1%) were more likely to have consumed less than 2 taels of white meat per day on average during the thirty days prior to the survey when compared with their respective counterparts (Table 4.10.4).

Table 4.10.4: Daily average amount of white meat consumed (Q23a & Q23b)

Variable	Level	Base	Less than 2 taels	2-4 taels	More than 4 taels	P-value		
						Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	990	47.8%	36.5%	15.7%		0.001	
	Female	1173	53.7%	33.5%	12.8%			
Age group	18-24	274	44.3%	37.0%	18.7%			0.004
	25-34	467	46.9%	36.0%	17.1%			
	35-44	513	54.0%	33.8%	12.2%			
	45-54	551	55.2%	33.0%	11.8%			
	55-64	334	50.2%	36.7%	13.1%			
Marital status	Never married	754	45.6%	36.9%	17.4%		0.000	
	Married	1294	53.5%	34.0%	12.6%			
	Divorced/ Separated/ Widowed	111	58.3%	31.9%	9.8%			
Educational attainment	Primary or below	234	54.4%	32.6%	13.0%			0.029
	Had not completed secondary	354	55.1%	35.1%	9.8%			
	Completed secondary (F5)	570	48.6%	36.5%	14.9%			
	Matriculation	207	58.1%	25.1%	16.8%			
	Tertiary (Non-degree, degree or above)	799	48.1%	36.8%	15.1%			
Monthly household income	Below $8,000	166	58.4%	26.2%	15.4%			0.026
	$8,000 - $13,999	310	55.3%	31.9%	12.7%			
	$14,000 - $19,999	173	49.2%	33.5%	17.3%			
	$20,000 - $39,999	607	50.1%	37.1%	12.8%			
	$40,000 or above	445	48.3%	35.6%	16.2%			
Type of living quarters	Public rental flats	693	56.1%	30.4%	13.5%		0.005	
	Subsidized sale flats	316	51.3%	35.7%	13.0%			
	Private housing	1133	47.7%	37.3%	15.0%			

4.10.5 Daily average amount of meat consumed

Average daily amount of meat consumed is associated significantly with respondents' gender, age, marital status, education level, occupation, monthly household income and type of living quarters.

Female respondents (52.1%), those aged 35-64 (ranged from 51.7% to 53.7%), married respondents (51.8%), divorced/ separated/ widowed respondents (53.5%), those who had not completed secondary education or below (ranged from 53.2% to 57.6%), non-working respondents (51.0%), those with monthly household income below $14,000 (ranged from 54.5% to 58.8%) and those living in public rental flats (51.4%) were more likely to have consumed less than 4 taels of meat per day on average during the thirty days prior to the survey when compared with their respective counterparts (Table 4.10.5).

Table 4.10.5: Daily average amount of meat consumed (Q22a, Q22b Q23a & Q23b)

Variable	Level	Base	Less than 4 taels	4-6 taels	More than 6 taels	P-value		
						Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	984	41.7%	25.8%	32.5%		0.000	
	Female	1170	52.1%	24.4%	23.5%			
Age group	18-24	273	38.6%	24.0%	37.4%			0.000
	25-34	461	36.6%	26.2%	37.1%			
	35-44	513	51.7%	25.2%	23.1%			
	45-54	550	52.4%	23.6%	24.0%			
	55-64	333	53.7%	26.4%	19.9%			
Marital status	Never married	749	38.9%	26.1%	35.0%		0.000	
	Married	1290	51.8%	24.0%	24.2%			
	Divorced/ Separated/ Widowed	111	53.5%	28.3%	18.2%			
Educational attainment	Primary or below	233	57.6%	22.7%	19.7%			0.000
	Had not completed secondary	351	53.2%	26.1%	20.7%			
	Completed secondary (F5)	570	46.6%	23.5%	29.9%			
	Matriculation	207	48.5%	21.8%	29.7%			
	Tertiary (Non-degree, degree or above)	794	42.0%	27.3%	30.7%			
Occupation	Managerial/ Professional Worker	528	44.7%	24.7%	30.7%		0.048	
	Clerk	302	43.8%	24.0%	32.2%			
	Service worker	206	43.9%	26.1%	30.0%			
	Blue collar worker	295	48.8%	28.2%	23.0%			
	Not working	788	51.0%	24.3%	24.7%			

Monthly household income	Below $8,000	166	58.8%	24.5%	16.7%			0.000
	$8,000 - $13,999	310	54.5%	23.4%	22.1%			
	$14,000 - $19,999	171	43.7%	26.5%	29.8%			
	$20,000 - $39,999	607	45.2%	26.4%	28.4%			
	$40,000 or above	445	43.1%	25.3%	31.6%			
Type of living quarters	Public rental flats	691	51.4%	21.4%	27.2%		0.049	
	Subsidized sale flats	313	47.0%	28.0%	25.1%			
	Private housing	1129	44.9%	26.1%	29.0%			

4.10.6 Frequency of consuming processed meat

Frequency of consuming processed meat is associated significantly with respondents' gender, age, marital status, education level, occupation and monthly household income.

A relatively higher proportion of male respondents (13.1%), those aged 25-34 (13.4%), never married respondents (12.5%), those with education level at secondary or above (ranged from 11.0% to 11.9%), service workers (13.1%) and those with monthly household income of $8,000 or above (ranged from 9.6% to 11.1%) consumed processed meat 4 days or more per week on average during the thirty days prior to the survey when compared with their respective counterparts (Table 4.10.6).

Table 4.10.6: Average number of days per week of consuming processed meat (Q24)

Variable	Level	Base	1 day or less	2-3 days	4 days or more	P-value		
						Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	1000	60.1%	26.8%	13.1%		0.000	
	Female	1181	71.5%	20.4%	8.1%			
Age group	18-24	276	57.2%	32.5%	10.4%			0.000
	25-34	466	60.6%	26.0%	13.4%			
	35-44	517	64.1%	24.5%	11.4%			
	45-54	555	69.0%	20.0%	11.0%			
	55-64	341	79.4%	16.7%	3.8%			
Marital status	Never married	757	59.6%	27.8%	12.5%		0.000	
	Married	1308	69.3%	21.4%	9.4%			
	Divorced/ Separated/ Widowed	111	76.2%	17.2%	6.6%			

Educational attainment	Primary or below	240	80.2%	13.6%	6.2%			0.000
	Had not completed secondary	357	72.4%	18.3%	9.2%			
	Completed secondary (F5)	575	62.3%	26.3%	11.4%			
	Matriculation	207	64.4%	23.8%	11.9%			
	Tertiary (Non-degree, degree or above)	803	62.7%	26.3%	11.0%			
Occupation	Managerial/ Professional worker	533	63.8%	24.6%	11.6%		0.000	
	Clerk	303	58.0%	30.0%	12.1%			
	Service worker	207	61.3%	25.6%	13.1%			
	Blue collar worker	304	66.8%	20.9%	12.3%			
	Not working	796	72.3%	20.4%	7.4%			
Monthly household income	Below $8,000	168	81.8%	11.1%	7.1%			0.000
	$8,000 - $13,999	315	71.9%	18.5%	9.6%			
	$14,000 - $19,999	173	64.5%	24.8%	10.7%			
	$20,000 - $39,999	610	61.3%	28.4%	10.3%			
	$40,000 or above	445	62.3%	26.6%	11.1%			

4.11 Eating habit in relation to fat and oil

4.11.1 Removing fat and skin when eating meat or poultry or choosing lean meat to eat[35]

The dietary habit of removing fat and skin when eating meat or poultry or choosing lean meat to eat during the thirty days prior to the survey is associated significantly with respondents' gender, age, marital status, occupation and type of living quarters.

Male respondents (22.1%), those aged 18-24 (17.1%), never married respondents (17.0%), divorced/ separated/ widowed respondents (16.8%), blue collar workers (22.9%) and those living in public rental flats (17.1%) were more likely to never remove fat and skin when eating meat or poultry or choose lean meat to eat during thirty days prior to the survey when compared with their respective counterparts (Table 4.11.1).

Table 4.11.1: Dietary habit of removing fat and skin when eating meat or poultry or choosing lean meat to eat during the thirty days prior to the survey (Q25)

Variable	Level	Base	Never	Seldom	Some-times	Often	Always	P-value		
								Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	992	22.1%	8.5%	22.7%	28.1%	18.6%		0.000	
	Female	1159	6.5%	5.8%	17.3%	34.6%	35.8%			
Age group	18-24	276	17.1%	10.0%	23.2%	28.0%	21.6%			0.000
	25-34	466	14.4%	8.2%	23.6%	29.1%	24.7%			
	35-44	511	13.8%	5.4%	19.0%	35.3%	26.6%			
	45-54	542	12.2%	7.2%	18.1%	31.8%	30.7%			
	55-64	330	12.8%	4.9%	16.3%	32.1%	33.7%			
Marital status	Never married	752	17.0%	8.9%	22.3%	29.5%	22.4%		0.000	
	Married	1287	11.6%	6.1%	18.5%	33.1%	30.8%			
	Divorced/ Separated/ Widowed	106	16.8%	6.4%	18.5%	26.3%	32.0%			
Occupation	Managerial/ Professional worker	523	12.5%	7.6%	19.0%	28.9%	32.0%		0.000	
	Clerk	301	12.0%	5.6%	19.0%	34.3%	29.1%			
	Service worker	207	17.4%	7.7%	27.0%	33.5%	14.4%			
	Blue collar worker	299	22.9%	8.3%	20.5%	28.9%	19.5%			
	Not working	784	11.1%	6.6%	18.6%	32.5%	31.2%			

[35] Excluding respondents who did not eat meat or poultry during the thirty days prior to the interview.

Type of living quarters	Public rental flats	691	17.1%	9.7%	20.6%	29.0%	23.6%		0.000	
	Subsidized sale flats	312	15.5%	4.6%	14.7%	38.7%	26.5%			
	Private housing	1126	11.2%	6.2%	20.5%	31.0%	31.0%			

4.11.2 Replacing full cream milk or evaporated milk with skimmed milk or low-fat milk[36]

The dietary habit of replacing full cream milk or evaporated milk with skimmed milk or low-fat milk during the thirty days prior to the survey is associated significantly with respondents' gender, age, marital status and occupation.

Male respondents (46.1%), those aged 18-34 (ranged from 37.2% to 39.2%), never-married respondents (39.8%), divorced/ separated/ widowed respondents (36.5%) and clerks (45.1%) were more likely to report that they never have the habit of replacing full cream milk or evaporated milk with skimmed milk or low-fat milk during the thirty days prior to the survey when compared with their respective counterparts (Table 4.11.2).

Table 4.11.2: Dietary habit of replacing full cream milk or evaporated milk with skimmed milk or low-fat milk during the thirty days prior to the survey (Q26)

Variable	Level	Base	Never	Seldom	Some-Times	Often	Always	P-value		
								Chi-Square Test	Kruskal Wallis test	Rank Correlation
Gender	Male	624	46.1%	14.3%	15.2%	13.4%	10.9%		0.000	
	Female	742	24.2%	14.0%	18.0%	18.8%	25.1%			
Age group	18-24	205	37.2%	12.7%	17.6%	16.1%	16.4%			0.001
	25-34	298	39.2%	14.1%	14.4%	13.8%	18.5%			
	35-44	326	30.9%	15.5%	18.9%	19.8%	14.8%			
	45-54	326	35.6%	12.0%	17.9%	15.0%	19.6%			
	55-64	194	28.0%	16.0%	13.1%	17.4%	25.5%			
Marital status	Never married	506	39.8%	10.7%	17.6%	16.4%	15.6%		0.007	
	Married	788	30.4%	16.1%	16.4%	16.8%	20.3%			
	Divorced/ Separated/ Widowed	68	36.5%	17.9%	13.1%	11.2%	21.3%			

[36] Excluding respondents who did not drink or consume milk during the thirty days prior to the interview.

Occupation	Managerial/ Professional worker	355	34.6%	9.1%	13.9%	19.6%	22.8%		0.012	
	Clerk	200	45.1%	9.0%	13.9%	13.6%	18.3%			
	Service worker	133	36.5%	18.0%	23.7%	10.1%	11.7%			
	Blue collar worker	179	33.5%	23.7%	17.3%	13.6%	11.9%			
	Not working	481	29.2%	15.2%	17.8%	17.3%	20.5%			

4.11.3 Choosing dishes with less oil or fat from the menu when eating out[37]

The dietary habit of choosing dishes with less oil or fat from the menu when eating out during the thirty days prior to the survey is associated significantly with respondents' gender, age, marital status, education level, occupation, monthly household income and type of living quarters.

Male respondents (26.5%), those aged 18-24 (22.4%), never married respondents (21.2%), those with education level of primary or below (30.8%), service workers (23.2%), blue collar workers (24.9%), those with monthly household income below $14,000 (ranged from 23.1% to 24.1%) and those living in public rental flats (23.3%) were more likely to report that they never have the habit of choosing dishes with less oil or fat from the menu when eating out during the thirty days prior to the survey when compared with their respective counterparts (Table 4.11.3).

Table 4.11.3: Dietary habit of choosing dishes with less oil or fat from the menu when eating out during the thirty days prior to the survey (Q27)

Variable	Level	Base	Never	Seldom	Some-times	Often	Always	P-value		
								Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	971	26.5%	18.8%	25.7%	23.5%	5.6%		0.000	
	Female	1109	13.9%	14.8%	27.0%	35.0%	9.3%			
Age group	18-24	273	22.4%	19.4%	29.5%	23.5%	5.2%			0.000
	25-34	465	20.5%	16.3%	29.6%	26.3%	7.4%			
	35-44	501	16.5%	16.0%	27.9%	33.2%	6.3%			
	45-54	521	21.2%	15.4%	23.2%	32.4%	7.7%			
	55-64	295	19.3%	17.1%	21.8%	29.6%	12.3%			
Marital status	Never married	747	21.2%	17.0%	29.7%	26.1%	6.0%		0.002	
	Married	1231	18.9%	16.7%	24.3%	31.8%	8.3%			
	Divorced/ Separated/ Widowed	96	19.1%	13.0%	27.5%	29.2%	11.2%			

[37] Excluding respondents who did not eat out during the thirty days prior to the interview.

Educational attainment	Primary or below	200	30.8%	17.1%	23.4%	18.7%	9.9%			0.000
	Had not completed secondary	329	24.6%	20.2%	25.7%	23.2%	6.3%			
	Completed secondary (F5)	552	18.2%	18.0%	24.8%	32.9%	6.2%			
	Matriculation	204	19.6%	17.4%	27.7%	29.0%	6.3%			
	Tertiary (Non-degree, degree or above)	794	16.1%	13.9%	28.2%	32.9%	8.9%			
Occupation	Managerial/ Professional worker	524	15.2%	15.0%	26.7%	35.1%	8.0%		0.000	
	Clerk	300	18.0%	16.0%	30.1%	29.9%	6.0%			
	Service worker	199	23.2%	11.2%	27.4%	33.2%	5.0%			
	Blue collar worker	285	24.9%	21.0%	27.3%	19.0%	7.8%			
	Not working	736	21.1%	17.9%	23.6%	28.9%	8.6%			
Monthly household income	Below $8,000	144	23.1%	22.0%	19.1%	24.8%	11.0%			0.000
	$8,000 - $13,999	294	24.1%	21.5%	21.9%	26.1%	6.4%			
	$14,000 - $19,999	167	16.3%	18.4%	30.2%	22.7%	12.4%			
	$20,000 - $39,999	597	15.1%	17.2%	29.4%	32.8%	5.5%			
	$40,000 or above	438	18.0%	12.7%	25.8%	35.2%	8.2%			
Type of living quarters	Public rental flats	645	23.3%	19.5%	26.6%	23.9%	6.6%		0.000	
	Subsidized sale flats	301	18.8%	17.9%	25.3%	30.1%	8.0%			
	Private housing	1112	18.0%	14.8%	26.2%	32.9%	8.1%			

4.11.4 Actively requesting for cooking methods with less oil or fat when eating out[38]

The dietary habit of actively requesting for cooking methods with less oil or fat when eating out during the thirty days prior to the survey is associated significantly with respondents' gender, age, marital status, education level, occupation, monthly household income and type of living quarters.

Male respondents (52.2%), those aged 18-24 (56.1%), never married respondents (49.3%), divorced/ separated/ widowed respondents (49.7%), those who had not completed secondary education or below (ranged from 51.4% to 53.0%), service workers (55.3%), those with monthly household income below $8,000 (57.0%) and those living in public rental flats (51.0%) were more likely to report that they never

[38] Excluding respondents who did not eat out during the thirty days prior to the interview.

have the habit of actively requesting for cooking methods with less oil or fat when eating out during the thirty days prior to the survey when compared with their respective counterparts (Table 4.11.4).

Table 4.11.4: Dietary habit of actively requesting for cooking methods with less oil or fat when eating out during the thirty days prior to the survey (Q28)

Variable	Level	Base	Never	Seldom	Some-times	Often	Always	P-value		
								Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Gender	Male	975	52.2%	16.8%	16.9%	10.5%	3.6%		0.000	
	Female	1110	40.9%	15.7%	18.4%	19.0%	6.1%			
Age group	18-24	276	56.1%	15.1%	18.3%	7.7%	2.8%			0.000
	25-34	464	45.4%	17.8%	18.0%	14.2%	4.5%			
	35-44	501	41.3%	16.6%	20.9%	16.6%	4.5%			
	45-54	525	47.6%	14.1%	16.7%	16.5%	5.1%			
	55-64	295	43.9%	16.8%	13.8%	16.9%	8.6%			
Marital status	Never married	748	49.3%	18.0%	18.1%	11.2%	3.4%		0.000	
	Married	1233	44.0%	15.1%	17.9%	17.1%	5.8%			
	Divorced/ Separated/ Widowed	98	49.7%	14.4%	12.0%	17.5%	6.4%			
Educational attainment	Primary or below	200	53.0%	15.3%	14.8%	11.8%	5.2%			0.023
	Had not completed secondary	332	51.4%	15.1%	15.2%	14.3%	4.0%			
	Completed secondary (F5)	556	44.1%	16.8%	17.1%	17.7%	4.2%			
	Matriculation	204	49.6%	14.4%	16.5%	15.6%	3.9%			
	Tertiary (Non-degree, degree or above)	794	42.8%	16.8%	20.2%	14.1%	6.1%			
Occupation	Managerial/ Professional worker	522	38.8%	17.1%	21.2%	16.5%	6.4%		0.000	
	Clerk	299	42.4%	17.5%	18.6%	17.6%	3.9%			
	Service worker	200	55.3%	9.7%	17.3%	14.6%	3.1%			
	Blue collar worker	288	51.3%	18.8%	16.0%	9.5%	4.3%			
	Not working	740	48.2%	15.7%	15.7%	15.0%	5.2%			

Monthly household income	Below $8,000	145	57.0%	15.0%	5.9%	14.8%	7.2%			0.001
	$8,000 - $13,999	295	49.9%	18.3%	16.8%	10.1%	4.9%			
	$14,000 - $19,999	167	48.0%	15.0%	13.7%	16.6%	6.6%			
	$20,000 - $39,999	599	42.6%	17.4%	20.4%	16.3%	3.3%			
	$40,000 or above	438	43.4%	12.0%	22.2%	16.0%	6.4%			
Type of living quarters	Public rental flats	646	51.0%	16.9%	15.3%	11.7%	5.1%		0.003	
	Subsidized sale flats	299	44.5%	14.1%	20.7%	16.3%	4.2%			
	Private housing	1119	43.9%	16.2%	18.2%	16.7%	5.0%			

4.12 Constipation

Having constipation during the thirty days prior to the survey is associated significantly with respondents' gender, marital status, educational attainment, occupation and type of living quarters.

Female respondents (6.0%), divorced/ separated/ widowed respondents (13.0%), those with education level of primary or below (7.1%), clerks (6.8%) and those living in public rental flats (5.7%) and subsidized sale flats (5.0%) were more likely to report having constipation all or most of the time during the thirty days prior to the survey when compared with their respective counterparts (Table 4.12).

Table 4.12: Frequency of having constipation (Q29)

Variable	Level	Base	All / Most of the time	Some / A little / None of the time	P-value		
					Chi-Square Test	Kruskal - Wallis test	Rank Correlation
Gender	Male	1002	2.3%	97.7%	0.000		
	Female	1183	6.0%	94.0%			
Marital status	Never married	760	4.1%	95.9%	0.000		
	Married	1308	3.7%	96.3%			
	Divorced/ Separated/ Widowed	111	13.0%	87.0%			
Educational attainment	Primary or below	240	7.1%	92.9%		0.017	
	Had not completed secondary	357	4.0%	96.0%			
	Completed secondary (F5)	577	5.1%	94.9%			
	Matriculation	207	3.5%	96.5%			
	Tertiary (Non-degree, degree or above)	804	3.2%	96.8%			
Occupation	Managerial/ Professional worker	534	3.0%	97.0%	0.019		
	Clerk	303	6.8%	93.2%			
	Service worker	208	5.4%	94.6%			
	Blue collar worker	304	2.1%	97.9%			
	Not working	797	5.1%	94.9%			
Type of living quarters	Public rental flats	702	5.7%	94.3%	0.049		
	Subsidized sale flats	316	5.0%	95.0%			
	Private housing	1145	3.4%	96.6%			

4.13 Cervical screening (for female respondents only)

4.13.1 Experience of cervical screening

The experience of cervical screening is associated significantly with female respondents' age, marital status, educational attainment, monthly household income and type of living quarters.

Women aged 35-54 (ranged from 77.1% to 81.3%), married respondents (80.9%), those who had not completed secondary education or below (ranged from 73.2% to 75.3%), those who had monthly household income of $40,000 or above (73.2%) and those living in subsidized sale flats (71.4%) or private housing (67.7%) were more likely to have had a cervical smear when compared with their respective counterparts (Table 4.13.1).

Table 4.13.1: Ever have cervical smear before (Q30a)

Variable	Level	Base	Yes	No	P-value		
					Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Age group	18-24	142	7.1%	92.9%		0.000	
	25-34	268	55.1%	44.9%			
	35-44	293	77.1%	22.9%			
	45-54	286	81.3%	18.7%			
	55-64	168	67.8%	32.2%			
Marital status	Never married	364	26.2%	73.8%	0.000		
	Married	732	80.9%	19.1%			
	Divorced/ Separated/ Widowed	79	69.3%	30.7%			
Educational attainment	Primary or below	151	73.2%	26.8%		0.000	
	Had not completed secondary	203	75.3%	24.7%			
	Completed secondary (F5)	324	66.5%	33.5%			
	Matriculation	102	51.6%	48.4%			
	Tertiary (Non-degree, degree or above)	399	53.3%	46.7%			
Monthly household income	Below $8,000	102	59.1%	40.9%		0.001	
	$8,000 - $13,999	178	60.4%	39.6%			
	$14,000 - $19,999	108	64.8%	35.2%			
	$20,000 - $39,999	312	62.1%	37.9%			
	$40,000 or above	226	73.2%	26.8%			
Type of living quarters	Public rental flats	410	53.4%	46.6%	0.000		
	Subsidized sale flats	167	71.4%	28.6%			
	Private housing	594	67.7%	32.3%			

4.13.2 Time since last cervical smear

Among those females who have had a cervical smear before, the period since their last cervical smear is significantly associated with their age, educational attainment and type of living quarters.

Of those females who have had a cervical smear before, a relatively higher proportion of respondents who had completed secondary school (59.2%) and tertiary education or above (58.9%) and those living in subsidized sale flats (59.4%) and private housing (56.0%) reported that they had their last smear within 12 months when compared with their respective counterparts. Also, the younger the respondents, the more likely that they had their last smear within 12 months when compared with their counterparts (Table 4.13.2).

Table 4.13.2: Period of time since last cervical smear (Q30b)

Variable	Level	Base	1-12 months	13-36 months	37 months and above	P-value		
						Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Age group	18-24	10	61.5%	38.5%	0.0%			0.000
	25-34	148	60.6%	34.3%	5.2%			
	35-44	222	58.1%	32.1%	9.8%			
	45-54	230	54.5%	32.0%	13.6%			
	55-64	110	40.6%	32.0%	27.4%			
Educational attainment	Primary or below	108	48.6%	30.8%	20.6%			0.020
	Had not completed secondary	149	47.0%	38.6%	14.4%			
	Completed secondary (F5)	213	59.2%	28.9%	11.9%			
	Matriculation	51	53.6%	41.3%	5.1%			
	Tertiary (Non-degree, degree or above)	211	58.9%	31.1%	10.0%			
Type of living quarters	Public rental flats	213	49.2%	34.6%	16.2%		0.047	
	Subsidized sale flats	119	59.4%	29.8%	10.8%			
	Private housing	397	56.0%	32.6%	11.4%			

4.13.3 Regular cervical smear test

Among those females who have had a cervical smear before, whether they had the cervical smear at a regular interval is associated significantly with their age.

Of those females who have had a cervical smear before, respondents aged 25-54 (ranged from 71.3% to 71.7%) were more likely to report that they had the smear at a regular interval when compared with their counterparts (Table 4.13.3).

Table 4.13.3: Having had cervical smear at a regular interval (Q30c)

Variable	Level	Base	Yes, at a regular interval	No, not at a regular interval	P-value		
					Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Age group	18-24	10	53.8%	46.2%		0.008	
	25-34	148	71.3%	28.7%			
	35-44	226	71.7%	28.3%			
	45-54	232	71.7%	28.3%			
	55-64	114	54.2%	45.8%			

4.13.4 Frequency of having cervical smear

Among those females who have had a cervical smear at a regular interval, the frequency of having a cervical smear is associated significantly with their education level and type of living quarters.

Of those females who have had a cervical smear at a regular interval, respondents with education at secondary or above (ranged from 68.0% to 72.3%) and those living in private housing (73.9%) were more likely to report that they had the cervical smear test at least once a year when compared with their respective counterparts (Table 4.13.4)

Table 4.13.4: Frequency of having cervical smear (Q30d)

Variable	Level	Base	At least once a year	Once every 2 years	Once every 3 years	P-value		
						Chi-Square Test	Kruskal-Wallis test	Rank Correlation
Educational attainment	Primary or below	66	62.2%	21.2%	16.6%			0.004
	Had not completed secondary	99	56.4%	21.3%	22.3%			
	Completed secondary (F5)	153	70.6%	19.4%	10.0%			
	Matriculation	42	68.0%	21.5%	10.6%			
	Tertiary (Non-degree, degree or above)	140	72.3%	22.6%	5.1%			
Type of living quarters	Public rental flats	143	61.4%	14.0%	24.5%		0.000	
	Subsidized sale flats	86	54.8%	33.0%	12.3%			
	Private housing	268	73.9%	21.0%	5.1%			

4.13.5 Ever have a total hysterectomy

Whether female respondents had a total hysterectomy is associated significantly with their age, marital status, education level, occupation and monthly household income.

Those aged 55-64 (13.3%), divorced/ separated/ widowed respondents (7.4%), blue collar workers (7.9%) and those with monthly household income below $8,000 (10.8%) were more likely to report that they had a total hysterectomy when compared with their respective counterparts. Also the lower the education level of the respondents, the more likely that they had a total hysterectomy when compared with their counterparts (Table 4.13.5).

Table 4.13.5: Ever had a total hysterectomy before (Q31)

Variable	Level	Base	Yes	No	P-value		
					Chi-Square Test	Kruskal Wallis test	Rank Correlation
Age group	18-24	142	0.5%	99.5%		0.000	
	25-34	268	0.0%	100.0%			
	35-44	294	0.5%	99.5%			
	45-54	285	7.8%	92.2%			
	55-64	169	13.3%	86.7%			
Marital status	Never married	364	1.2%	98.8%	0.002		
	Married	734	5.2%	94.8%			
	Divorced/ Separated/ Widowed	80	7.4%	92.6%			
Educational attainment	Primary or below	152	12.1%	87.9%		0.000	
	Had not completed secondary	201	6.0%	94.0%			
	Completed secondary (F5)	325	2.6%	97.4%			
	Matriculation	102	2.0%	98.0%			
	Tertiary (Non-degree, degree or above)	399	1.8%	98.2%			
Occupation	Managerial/ Professional worker	223	2.1%	97.9%	0.012		
	Clerk	197	2.2%	97.8%			
	Service worker	99	0.7%	99.3%			
	Blue collar worker	83	7.9%	92.1%			
	Not working	559	5.4%	94.6%			
Monthly household income	Below $8,000	103	10.8%	89.2%		0.007	
	$8,000 - $13,999	177	2.9%	97.1%			
	$14,000 - $19,999	108	5.5%	94.5%			
	$20,000 - $39,999	313	2.0%	98.0%			
	$40,000 or above	226	2.7%	97.3%			

4.14 General health status

4.14.1 Doctor-diagnosed chronic diseases

Whether currently having any doctor-diagnosed chronic diseases which requires long-term follow up is associated significantly with respondents' age, marital status, educational attainment, occupation and monthly household income.

A relatively higher proportion of divorced/ separated/ widowed respondents (34.5%), blue collar workers (25.1%), non-working respondents (26.1%) and those with monthly household income below $8,000 (36.1%) reported that they had at least one doctor-diagnosed chronic disease which requires long-term follow up when compared with their respective counterparts. Also the older and the lower education level of the respondents, the more likely that they had at least one doctor-diagnosed chronic disease which requires long-term follow up when compared with their respective counterparts (Table 4.14.1).

Table 4.14.1: Number of doctor-diagnosed chronic disease (Q32)

Variable	Level	Base	None	At least one	P-value		
					Chi-Square Test	Kruskal Wallis test	Rank Correlation
Age group	18-24	277	92.9%	7.1%		0.000	
	25-34	468	91.4%	8.6%			
	35-44	517	84.2%	15.8%			
	45-54	554	74.6%	25.4%			
	55-64	341	53.9%	46.1%			
Marital status	Never married	759	90.1%	9.9%	0.000		
	Married	1308	74.7%	25.3%			
	Divorced/ Separated/ Widowed	111	65.5%	34.5%			
Educational attainment	Primary or below	240	65.2%	34.8%		0.000	
	Had not completed secondary	356	73.4%	26.6%			
	Completed secondary (F5)	577	79.7%	20.3%			
	Matriculation	207	82.5%	17.5%			
	Tertiary (Non-degree, degree or above)	804	85.9%	14.1%			
Occupation	Managerial/ Professional worker	534	83.5%	16.5%	0.000		
	Clerk	303	87.1%	12.9%			
	Service worker	208	87.0%	13.0%			
	Blue collar worker	304	74.9%	25.1%			
	Not working	796	73.9%	26.1%			

Monthly household income	Below $8,000	168	63.9%	36.1%		0.000	
	$8,000 - $13,999	315	78.9%	21.1%			
	$14,000 - $19,999	173	72.9%	27.1%			
	$20,000 - $39,999	611	81.4%	18.6%			
	$40,000 or above	446	86.7%	13.3%			

4.14.2 Perceived general health status

Perceived general health status is associated significantly with respondents' gender, age, marital status, educational attainment, occupation, monthly household income and type of living quarters.

A relatively higher proportion of male respondents (50.5%), those aged 18-24 (56.8%), never married respondents (51.4%), those who had matriculation education or above (ranged from 51.6% to 54.7%), managerial/ professional workers (55.8%), those with monthly household income of $40,000 or above (56.9%) and those living in private housing (49.1%) self-rated their health status as "excellent/ very good/ good" when compared with their respective counterparts (Table 4.14.2).

Table 4.14.2: Perceived general health status (Q33)

Variable	Level	Base	Excellent / Very good/ Good	Fair	Poor	P-value		
						Chi-Square Test	Kruskal Wallis test	Rank Correlation
Gender	Male	1002	50.5%	45.5%	4.0%		0.000	
	Female	1182	41.9%	51.4%	6.7%			
Age group	18-24	277	56.8%	38.4%	4.8%			0.000
	25-34	468	46.7%	49.8%	3.6%			
	35-44	516	46.8%	47.8%	5.4%			
	45-54	555	42.5%	50.2%	7.2%			
	55-64	341	41.0%	53.2%	5.8%			
Marital status	Never married	760	51.4%	44.5%	4.1%		0.000	
	Married	1307	43.5%	51.0%	5.5%			
	Divorced/ Separated/ Widowed	111	37.4%	46.7%	15.9%			
Educational attainment	Primary or below	240	37.8%	54.1%	8.1%			0.000
	Had not completed secondary	357	36.9%	57.4%	5.7%			
	Completed secondary (F5)	577	40.4%	52.7%	6.9%			
	Matriculation	207	51.6%	44.6%	3.7%			
	Tertiary (Non-degree, degree or above)	803	54.7%	41.3%	4.0%			

Occupation	Managerial/ Professional worker	534	55.8%	40.0%	4.2%		0.000	
	Clerk	302	45.4%	50.8%	3.9%			
	Service worker	208	43.0%	51.6%	5.4%			
	Blue collar worker	304	39.9%	55.2%	5.0%			
	Not working	797	41.9%	50.8%	7.3%			
Monthly household income	Below $8,000	168	38.9%	48.3%	12.8%			0.000
	$8,000 - $13,999	315	37.2%	56.5%	6.3%			
	$14,000 - $19,999	173	42.4%	51.0%	6.7%			
	$20,000 - $39,999	611	46.8%	49.7%	3.5%			
	$40,000 or above	446	56.9%	39.9%	3.2%			
Type of living quarters	Public rental flats	702	42.4%	49.8%	7.8%		0.001	
	Subsidized sale flats	316	42.2%	52.7%	5.1%			
	Private housing	1144	49.1%	46.6%	4.3%			

Chapter 5 Conclusion and Recommendations

5.1 Conclusion

5.1.1 Weight status and control

Using the World Health Organization (WHO)'s standard Asian classification of weight status, about half of the respondents (49.5%) were classified as "normal", 22.5% of the respondents were classified as "obese" and 17.5% were regarded as "overweight", while the remaining (10.4%) were classified as "underweight".

Only 15.5% of respondents claimed that they had a weight difference of more than 10 pounds when compared with one year ago. Among these respondents, 66.6% claimed that they had a weight increase.

Regarding respondents' self-perceived current weight status, close to half (48.1%) of the respondents perceived themselves as "just right". In addition, 42.7% considered themselves as "overweight" while 9.2% considered themselves as "underweight". Female respondents, the older respondents (aged 35 years or above), the married or divorced/ separated/ widowed respondents, those with primary education level or below, managerial/ professional workers, clerks, non-working respondents and service workers were more likely to view themselves as "overweight". Overall, 66.9% of the respondents perceived their weight status in a way consistent with the WHO's weight status classification for Asian, while 18.3% of the respondents overestimated and 14.8% of them underestimated their weight status.

During the twelve months prior to the survey, three-tenths (30.0%) of the respondents had done something deliberately to control their weight, of which 56.2% of them aimed to lose weight. Among those respondents who had done something deliberately to control their weight, the most commonly used methods to control weight were "doing physical exercise" (85.8%) and "changing dietary habit" (73.8%).

5.1.2 Physical activities and leisure-time exercises

For people of all ages, genders and bodily conditions, regular physical activity improves health[39]. However, this survey revealed that most respondents engaged in limited physical activity. Over half (53.0%) of the respondents had not engaged in any moderate physical activity for at least 10 minutes and over three-fifths (62.7%) of respondents had not engaged in any vigorous physical activity for at least 10 minutes a day during the seven days prior to the survey. Overall, 16.9% of respondents reported that they had at least 30 minutes of moderate physical activity, or at least 20 minutes of vigorous physical activity, on 5 or more days a week.

On the other hand, walking was the most common form of physical activity and 71.0% of the respondents had spent at least 10 minutes on walking every day during

[39] "Fact Sheet on Physical Activity", Department of Health. (http://www.dh.gov.hk/english/useful/useful_ dykt/useful_dykt_exercise.html)

the seven days prior to the survey. The survey also revealed that respondents had spent long hours sitting during the day, as shown by an average of 6.5 hours per day during weekdays (Monday to Friday) during the seven days prior to the survey.

Based on the categorical scoring of the International Physical Activity Questionnaire (IPAQ) analysis, more than half of the respondents' level of physical activity was classified as "moderate" (55.9%). The proportion of respondents having "high" level of physical activity was 22.9%. Respondents who had not completed secondary or with education at primary or below, blue collar workers or service workers, those with household income below $20,000 and those living in public rental flats were more likely to have "high" level of physical activity than their respective counterparts.

Concerning leisure-time exercise, almost two-fifths (39.5%) of the respondents reported that they exercised less than once a month in their leisure-time. On the other hand, 16.5% of respondents reported that they exercised 4 times or more a week and 33.8% exercised 1 to 3 times a week in their leisure-time. Females, divorced/ separated/ widowed respondents, blue collar workers and those living in subsidized sale flats and public rental flats were more likely to exercise less than once a month in leisure-time than their respective counterparts. Also, the lower the education level and monthly household income of the respondents, the more likely they exercised less than once a month in leisure-time.

5.1.3 Fruit and vegetable consumption

Eating enough fruit and vegetables has many health benefits. Adequate consumption of fruit and vegetables as part of the daily diet could help prevent major non-communicable diseases (NCD) such as cardiovascular diseases and certain cancers. Eating a variety of vegetables and fruit could ensure an adequate intake of most micronutrients and dietary fibres.

Most respondents (81.7%) had eaten vegetables on a daily basis while more than half of the respondents (52.1%) had eaten fruit every day. Regular fruit or vegetable juice consumption was found to be uncommon amongst respondents, as only 3.0% of the respondents drank fruit or vegetable juice daily.

Overall, the average daily intake of fruit and vegetables by the respondents was only 3.4 servings (excluding juice). Around one-fifth (20.3%) of the respondents had a daily intake of 5 or more servings of fruit and vegetables per day. Females, those aged 55-64, married respondents, non-working respondents and those living in private housing were more likely to have consumed at least the recommended 5 servings of fruit and vegetables a day than their respective counterparts.

5.1.4 Smoking habits

14.1% of the respondents were current smokers at the time of this survey of which 13.6% were daily smokers. A relatively higher proportion of current smokers who reported smoking more than 20 cigarettes a day were found amongst male respondents, those aged 45-64, those with primary education level or below or with matriculation education level, blue collar workers and those living in subsidized sale flats.

5.1.5 Pattern of alcohol consumption

More than one-third of the respondents (36.3%) were drinkers who had drunk at least one alcoholic drink during the thirty days prior to the survey. On the whole, drinking during the thirty days prior to the survey was more prevalent among males, those aged 25-34, never married respondents, those with tertiary education level or above, service workers and managerial/ professional workers, those with higher monthly household income and those living in subsidized sale flats and private housing .

Among the drinkers who had drunk alcohol during the thirty days prior to the survey, 23.2% of them reported that they had engaged in binge drinking (drinking 5 or more glasses/cans of alcohol on one occasion) at least once during the thirty days prior to the survey. Binge drinking was more common among male respondents, those aged 18-34, never married respondents, blue collar workers and service workers.

Also among the drinkers who had drunk alcohol during the thirty days prior to the survey, 14.2% of respondents reported that they had drunk so much and exhibited signs of drunkenness. It was more common among respondents aged 18-34 and never married respondents.

5.1.6 Level of psychological distress

The level of psychological distress of the respondents was measured by the Kessler 6-item Psychological Distress Scale (K6). Based on the scale, 6.7% of the respondents were classified as having severe psychological distress during the thirty days prior to the survey. Divorced/ separated/ widowed respondents, those with lower monthly household income and those living in public rental flats had the highest risk of having severe psychological distress.

Of those who had had any of the six psychological distress symptoms during the thirty days prior to the survey, 1.9% had seen a doctor or other health professional because of those emotional problems. Females and respondents with lower monthly household income were more likely to have consulted a health professional for the problems.

5.1.7 Sleeping habits

Most respondents (89.5%) slept for at least six hours per day on average. Among those who slept less than 6 hours per day, a relatively higher proportion were amongst

those aged 45-64, divorced/ separated/ widowed respondents, service workers and blue collar workers.

5.1.8 Social Support

11.7% of respondents reported that they did not have any close relatives or friends who can provide help for their private, emotional and financial issues. Generally speaking, males, older respondents, divorced/ separated/ widowed respondents, blue collar workers, respondents with lower education level and monthly household income and those living in public rental flats and subsidized sale flats were more likely to lack social support.

5.1.9 Meat consumption

During the thirty days prior to the survey, respondents on average consumed 2.6 taels of red meat and 2.4 taels of white meat per day. Overall, over one-quarter (27.6%) of respondents consumed more than 6 taels of meat on average per day and 47.4% of respondents consumed less than 4 taels of meat per day. Females respondents, those aged 35-64, married respondents, divorced/ separated/ widowed respondents, those who had not completed secondary education or below, non-working respondents, those with monthly household income below $14,000 and those living in public rental flats were more likely to have consumed less than 4 taels of meat per day on average than their respective counterparts.

Excessive consumption of processed meat is considered a potential health risk factor. It was found that 10.4% of respondents had consumed processed meat on four or more days per week on average during the thirty days prior to the survey. A relatively higher proportion of male respondents, those aged 25-34, never married respondents, those with education level at secondary or above, service workers and those with monthly household income of $8,000 or above than their respective counterparts reported so.

5.1.10 Eating habits in relation to fat and oil

During the thirty days prior to the survey, almost three-fifths (59.5%) of respondents had the habit of always or often removing fat and skin when eating meat or poultry or choosing lean meat to eat, while more than one-third (35.0%) of respondents had always or often replaced full cream milk or evaporated milk with skimmed milk or low-fat milk.

When eating out during the thirty days prior to the survey, over one-third (37.2%) of respondents had always or often chosen dishes with less oil or fat from the menu, while one-fifth (20.0%) of respondents had always or often actively requested for cooking methods with less oil or fat.

5.1.11 Constipation

Over one-third (37.9%) of respondents reported that they had constipation during the thirty days prior to the survey, of which 4.3% had constipation all or most of the time. Females, divorced/ separated/ widowed respondents, those with education level of primary or below, clerks and those living in public rental flats and subsidized sale flats were more likely to report that they had constipation all or most of the time during the thirty days prior to the survey.

5.1.12 Cervical screening

Close to two-thirds (63.1%) of the female respondents reported that they had had a cervical smear before. Those aged 35-54, married respondents, those who had not completed secondary education or below, those with monthly household income of $40,000 or above and those living in subsidized sale flats or private housing were more likely to have had a cervical smear than their respective counterparts.

Among those female respondents who had a cervical smear before, more than half (54.7%) of them had their last cervical smear taken within 12 months prior to the survey and more than two-thirds (68.4%) of them reported having a cervical smear at a regular interval.

Among those female respondents who had cervical smears regularly, 60.3% of them had the tests once a year.

5.1.13 General health status

About one-fifth (20.4%) of respondents claimed that they had at least one doctor-diagnosed chronic disease that requires long-term follow up. A relatively higher proportion of older respondents, divorced/ separated/ widowed respondents, those with lower education level, blue collar workers, non-working respondents and those with monthly household income below $8,000 had at least one doctor-diagnosed chronic disease which required long-term follow up, than their respective counterparts.

Less than half (45.8%) of respondents rated their health status “good”, “very good” or “excellent”, while 5.5% considered their health status was “poor”.

5.2 Recommendations

Some recommendations based on the survey findings are suggested below:

1. The survey results showed that 40.1% of the respondents were overweight or obese. Besides, less than one-fifth (16.9%) of respondents reported that they had at least 30 minutes of moderate physical activity, or at least 20 minutes of vigorous physical activity, on 5 or more days a week. Therefore, the importance of having an appropriate body weight and engaging in regular physical activity needs to be further emphasized. Health promotion programmes could focus on educating the community about the proper methods of maintaining normal body weight and the benefits of regular physical activity, such as reducing the risk of developing various chronic diseases.

2. Only about one-fifth of respondents reported that they had a daily average intake of five or more servings of fruit and vegetables per week. Also from the survey, over one-third of respondents had ever had constipation during the thirty days prior to the survey. Apart from prevention or relief of constipation, sufficient intake of vegetable and fruit can improve general health. Therefore, the benefits of having at least 5 servings of fruit and vegetables a day should be further promoted to encourage healthy diet.

3. In 2009, 6.7% of respondents aged 18-64 were classified as having severe psychological distress. Periodic monitoring of the population's mental health is warranted so as to track any changes and take appropriate action when the situation is being aggravated.

4. While red meat is a good source of protein and iron, it contains relatively more saturated fat which is associated with cardiovascular diseases. Besides, excess consumption of red and processed meats is a probable cause of some cancers so the World Cancer Research Fund recommends meat eaters to limit intake of red meat and avoid processed meat[40]. As the survey revealed that 16.1% of respondents ate more than 4 taels of red meat per day on average and that 10.4% had consumed processed meat on four or more days per week on average, meat eaters should be advised to consume less than 500 grams (about 13 taels) of red meat a week and very little if any processed meat.

[40] World Cancer Research Fund/ American Institute for Cancer Research. Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective. Washington DC: ACIR; 2007.

5.3 Limitations

1. Although the data were weighted by age and sex distribution 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 exceeds 85%, this reason only excludes 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 high alcohol consumption). Conversely, respondents might over-report those behaviours that are considered desirable (such as consuming more fruit and vegetables).
    ii. Self-reporting behaviour or practices is also subject to recall bias and recall error (such as the consumption of fruit and vegetables or amount of physical activities). However, the recall period was kept quite short in this survey to 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 2009 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 20 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: 3921 2600 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

Telephone No. _____

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)

_____ 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

Weight Status and Control

Q2a. What is your height without wearing shoes? _____ cm

Q2b. What is your weight wearing simple clothes? _____Kg

Q2c. What is your waist circumference? _____ cm

Q3a. Does your weight now differ by more than 10 pounds (about 4.5 Kg) from your weight one year ago?

1. Yes
2. No (skip to Q4)
3. Don't know (skip to Q4)

Q3b.Did it increase or decrease?

1. Increase
2. Decrease

Q4. What do you think about your current weight?

1. Overweight
2. Just right
3. Underweight

Q5a. During the past 12 months, did you try to do something deliberately to control your weight for example increasing weight, decreasing weight or maintaining weight?

1. Yes
2. No (skip to next section – Q7a)

Q5b. Was it for increasing weight, losing weight or maintaining weight?

1. Losing weight
2. Increasing weight
3. Maintaining weight

Q6. Did you use the following methods to control your weight?

Q6a. Taking the drugs or products including health food for controlling your weight?

1. Yes
2. No

Q6b. Consulting doctors or dieticians?

1. Yes
2. No

Q6c. Going to weight control or beauty parlours?

1. Yes
2. No

Q6d. Doing physical exercises?

1. Yes
2. No

Q6e. Changing dietary habit?

1. Yes
2. No

Q6f. Any other methods?

1. Yes, please specify:_____
2. No

Physical Activity and Leisure-time Exercises

Q7a. During the past 7 days, on how many days did you do vigorous physical activities? Vigorous physical activities are those that make you breathe much harder than normal, e.g., aerobics, football, swimming, heavy physical work, jogging, etc., and you did these activities for at least 10 minutes at a time.

_____ Days

Q7b. [Ask those whose answers in Q7a are greater than or equal to "1"]
On those days that you have performed vigorous physical activity for at least 10 minutes, how much time on average per day did you usually spend on doing vigorous physical activities?

_____ Minutes

Q8a. During the past 7 days, on how many days did you do moderate physical activities? Moderate physical activities are those that make you breathe somewhat harder than normal, e.g., bicycling, washing cars/polishing, fast walking, cleaning windows, etc. and you did these activities for at least 10 minutes at a time.

_____ Days

Q8b. [Ask those whose answers in Q8a are greater than or equal to "1"]
On those days that you have performed moderate physical activity for at least 10 minutes, how much time on average per day did you usually spend on doing moderate physical activities?

_____ Minutes

Q9. During the past 7 days, how many days in total did you have moderate physical activities for at least 30 minutes, or vigorous physical activities for at least 20 minutes?

_____ Days

Q10a. During the past 7 days, on how many days did you walk for at least 10 minutes at a time? This includes walking to offices/schools, walking to travel from place to place, and walking for leisure.

_____ Days

Q10b. [Ask those whose answers in Q10a are greater than or equal to "1"]
On those days that you have walked for at least 10 minutes, how much time on average did you usually spend on walking in one of those days?

_____Hours _____Minutes

Q11. During the past 7 days, how much time on average did you usually spend on sitting on a weekday? This includes time spent sitting at work, at home, visiting friends, reading, traveling on public transport, and lying down to watch television. [If the respondent cannot answer the daily average time, then say: Please try to make an estimate as accurate as possible.]

_____ Hours _____ Minutes

Q12. During the past 30 days, how often did you exercise in your leisure time, which at least made you breathe somewhat harder than normal and sweat?

1. Once or more a day
2. 4-6 times/week
3. 2-3 times/week
4. Once a week
5. 2-3 times a month
6. Once a month
7. Less than one a month

Fruit and Vegetable Consumption

Q13a. On average, how many days do you eat fruit each week? (not including fruit juice)

1. 1 Day
2. 2 Days
3. 3 Days
4. 4 Days
5. 5 Days
6. 6 Days
7. 7 Days
8. None (skip to Q14a)

Q13b. [Ask those whose answers in Q13a are from "1" to "7"]
On average, how many fruit did you eat on one of those days?
(Interviewer: One fruit equals to 1 medium-sized apple or orange, 1 medium-sized banana, or 2 kiwi fruits or plums, or 1 bowl of small fruits like grapes or strawberries. Ask exactly what they ate and then convert using table. The numbers can be recorded as half such as 0.5 or 1.5.)

_____

Q14a. On average, how many days do you eat vegetables each week? (not including vegetable juice)

1. 1 Day
2. 2 Days
3. 3 Days
4. 4 Days
5. 5 Days
6. 6 Days
7. 7 Days
8. None (skip to Q15)

Q14b. [Ask those whose answers in Q14a are from "1" to "7"]
On average, how many bowls of cooked vegetables did you eat on one of those days? (Interviewer's prompts: one bowl refers to the size of a rice bowl. The numbers can be recorded as half such as 0.5 or 1.5. For uncooked leafy vegetables, half the total.)

_____ Bowls

Q15. On average, how many days do you drink at least one cup of fruit or vegetable juice each week? "Juice" refers to freshly squeezed juice or those are labeled 100% or pure fruit or vegetable juice. A cup means 250 mls in volume or a standard-sized tetra pack of juice drink.

1. 1 Day
2. 2 Days
3. 3 Days
4. 4 Days
5. 5 Days
6. 6 Days
7. 7 Days
8. None

Smoking Pattern

Q16a. Have you smoked before? (Interviewer: read out the answers one by one)

1. Yes, but not now
2. Yes, and still smoking (skip to Q16c)
3. Never (skip to next section – Q17a)

Q16b. How long have you abstained from smoking? (Interviewer: read out the answers one by one)

1. Had abstained for less than 1 month (skip to next section – Q17a)
2. Had abstained for 1 month to l year (skip to next section – Q17a)
3. Had abstained for more than l year (skip to next section – Q17a)

Q16c. How many cigarettes do you smoke on average per day? (Interviewer: Do not read out the answers)

1. Less than 1 cigarette per day now
2. 1-10 cigarettes per day now
3. 11-20 cigarettes per day now
4. More than 20 cigarettes per day now

Pattern of Alcohol Consumption

Q17a. Have you ever had at least one alcoholic drink? (Interviewer: read out the answers one by one)

1. Yes, during the last month
2. Yes, during the previous 2 – 12 months (skip to next section – Q18a)
3. Yes, more than 12 months ago (skip to next section – Q18a)
4. No (skip to next section – Q18a)

Q17b. On how many days per week during the past 30 days, on average, did you drink at least one alcoholic drink? (Interviewer: Do not read out the answers)

1. Daily
2. 6 days per week
3. 5 days per week
4. 4 days per week
5. 3 days per week
6. 2 days per week
7. 1 day per week
8. Less than 1 day per week

Q17c. How many standard units of drinks on average did you drink on those days? (Read out the types of standard drink) (A can or small bottle of beer is approximately equal to 1.5 standard drinks. Or 1 standard drink is approximately equal to one dining glass of wine, or 1 spirit nip of brandy/whisky, or one small glass of Chinese wine such as rice wine) (A can/ small bottle of beer approximately equals to about 330 – 375 mls. Be aware, a big bottle can range from 640 mls (most brands) to 960 mls (Blue Ribbon).) [Interviewer please refer to the standard drink information sheet- the illustrated guide to typical standard drinks- for other examples if needed]

_____ Unit of drinks

Q17d. In the past 30 days, did you drink at least 5 glasses or cans of alcohol on one occasion? That means the total number of glasses and cans of any type of alcohol, and one occasion means period of a few hours.

1. Yes
2. No (skip to Q17f)

Q17e. How many times did you do this in the past 30 days? (Interviewer: Do not read out the answers)

1. Once
2. Twice
3. Three times or more

Q17f. In the past 30 days, did you drink so much and exhibited signs of drunkenness, such as flushed face or reddened eyes, slurred or incoherent speech, unsteady feet or staggering gait, vomiting and hangover in the next day?

1. Yes
2. No (skip to next section – Q18a)

Q17g. How many times did you do this in the past 30 days? (Interviewer: Do not read out the answers)

1. Once
2. Twice
3. Three times or more

Level of Psychological Stress

Q18a. In the past 30 days, how often did you feel nervous? (Interviewer: Read out the 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

Q18b. In the past 30 days, how often did you feel hopeless? (Interviewer: Read out the 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

Q18c .In the past 30 days, how often did you feel restless or fidgety? (Interviewer: Read out the 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

Q18d. In the past 30 days, how often did you feel so sad that nothing could cheer you up? (Interviewer: Read out the 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

Q18e. In the past 30 days, how often did you feel that everything was an effort? (Interviewer: Read out the 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

Q18f. In the past 30 days, how often did you feel worthless? (Interviewer: Read out the 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

Interviewer's prompt: For those respondents who claim did not experience the six kinds of feelings mentioned above -> Please go to next section – Q20.

Q19. In the past 30 days, how many times did you see a doctor or other health professional because of these feelings/ emotional problems?

_____Times

Sleeping habits

Q20. On average, how many hours did you sleep per day in the past 30 days? [Interviewer: The numbers can be recorded as half such as 0.5 or 1.5]

_____ Hours

Social Support

Q21. How many close relatives or friends that you have and can talk to about private matter, call on for emotional support or financial assistance? (Interviewer: Close relatives or friends include respondents' spouse, parents or off-spring)

_____ (99→ Refuse to answer)

Meat Consumption

Q22a. In the past 30 days, how many days on average did you eat red meat each week? Common examples of red meat include pork, beef, and lamb.

1. Daily
2. 6 days per week
3. 5 days per week
4. 4 days per week
5. 3 days per week
6. 2 days per week
7. 1 day per week
8. Less than 1 day per week

Q22b. [Ask those who answers "1" to "7" in Q22a]
Taking only the days you had eaten red meat into account, on average, how many taels/ slices of red meat about the size of a mahjong tile did you eat in one day? (Interviewer's prompts: A tael of meat also equates to 40 grams, 1.33 ounces or 4 slices, and 1 pound is equivalent to 12 taels. The numbers can be recorded as half such as 0.5 or 1.5 taels.)

_____Taels

Q23a. In the past 30 days, how many days on average do you eat white meat each week? Common examples of white meat include poultry and fish.

1. Daily
2. 6 days per week
3. 5 days per week
4. 4 days per week
5. 3 days per week
6. 2 days per week
7. 1 day per week
8. Less than 1 day per week

Q23b. [Ask those who answers "1" to "7" in Q23a]

Taking only the days you had eaten white meat into account, on average, how many taels/ slices of white meat about the size of a mahjong tile did you eat in one day? (Interviewer's prompts: A tael of meat also equates to 40 grams, 1.33 ounces or 4 slices, and 1 pound is equivalent to 12 taels. The numbers can be recorded as half such as 0.5 or 1.5 taels.)

_____ Taels

Q24. In the past 30 days, how many days on average did you eat <u>processed meat</u> each week? They include canned meat, cured meat or smoked meat, such as luncheon meat, ham, sausages, bacon and Chinese preserved meat.

1. Daily
2. 6 days per week
3. 5 days per week
4. 4 days per week
5. 3 days per week
6. 2 days per week
7. 1 day per week
8. Less than 1 day per week

<u>Eating Habits in relation to Fat and Oil</u>

Q25. In the past 30 days, how often did you remove the fat and skin when eating meat or poultry, or choose lean meat to eat? (Interviewer: Read out 1-5 answers)

1. Never
2. Seldom
3. Sometimes
4. Often
5. Always
6. Do not remember
7. Did not eat meat or poultry

Q26. In the past 30 days, how often did you replace full cream milk or evaporated milk with skimmed milk or low-fat milk? (Interviewer: Read out 1-5 answers)

1. Never
2. Seldom
3. Sometimes
4. Often
5. Always
6. Do not remember
7. Did not drink/consume milk

Q27. In the past 30 days, how often did you choose dishes with less oil or fat (e.g. dishes prepared by steaming or boiling, noodles-in-soup and vegetables-in-soup) from the menu when eating out? (Interviewer: Read out 1-5 answers)

1. Never
2. Seldom
3. Sometimes
4. Often
5. Always
6. Do not remember
7. Did not eat out

Q28. In the past 30 days, how often did you actively request for cooking methods with less oil or fat (e.g. vegetables with no oil added, dishes prepared by cooking methods with less oil used) when eating out? (Interviewer: Read out 1-5 answers)

1. Never
2. Seldom
3. Sometimes
4. Often
5. Always
6. Do not remember
7. Did not eat out

Constipation

Q29. In the past 30 days, how often did you have constipation? It includes straining to pass hard or dry faeces, having a bowel movement fewer than three times per week, or having the sensation of incomplete bowel evacuation.

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

Cervical Screening

(For female respondents only)

Q30a. Have you ever had a cervical smear before?

1. Yes
2. No (skip to Q31)
3. Not sure (skip to Q31)

Q30b. [Ask those whose answers are "Yes" in Q30a]
About how long ago did you have the last cervical smear? (Interviewer: Do not read out the answers)

1. Within 12 months
2. 13-24 months
3. 25-36 months
4. 37-48 months
5. 49-60 months
6. 61 months and above
7. Cannot remember

Q30c. Do you have your cervical smear at a regular interval?

1. Yes, at a regular interval
2. No, not at a regular interval (skip to Q31)

Q30d. [Ask those whose answers "Yes, at regular interval" in Q34c]
If regular, how often do you have cervical smear?

1. More than once a year
2. Once a year
3. Once every 2 years
4. Once every 3 years
5. Once every 4 years
6. Once every 5 years
7. Once every 6-10 years
8. Less frequent than once every 10 years
9. Cannot say/remember

Q31. Have you had a total hysterectomy (surgical removal of the entire uterus) before?

1. Yes
2. No

General Health Status

Q32. How many doctor-diagnosed chronic diseases that require long-term (i.e lasting at least 6 months) follow up do you currently have? (Interviewer: please provide examples of chronic diseases if necessary)

_____

Q33. In general, would you say your health is: (Interviewer: Read out the answers)

1. Excellent
2. Very good
3. Good
4. Fair
5. Poor

Demographics

Q34. What is your age?

_____ Years

Q35. What is your highest educational attainment? (Interview: read out the answers one by one)

1. Primary or below
2. Had not completed secondary
3. Completed secondary (F5)
4. Matriculation
5. Tertiary (Non-degree, degree or above)

Q36. 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

Q37a. Are you currently engaged in a job?

1. Yes
2. No (skip to Q37c)

Q37b. What is your occupation? (Interviewer: record the details of occupation)

1. Employers/Managers/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. Un-skilled worker
11. Other: _____

(skip to Q38)

Q37c. Are you a ……..? (Interviewer: read out the answers one by one)

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

(skip to Q39)

Q38. How much is your monthly personal income including all the 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

Q39. How much is your monthly household income including all the 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

Q40. How many 'dependants' do you currently have?

_____ Persons (99→ Refuse to answer)

Q41. 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

Q42. How many people are living in this household, including yourself but excluding live-in maids?

_____Persons

Q43. What is your religion?

1. Catholicism
2. Christianity
3. Buddhism
4. Hinduism
5. Muslim
6. Other, specify: _____
7. No religion

END