National Population Health Survey 2021

2021

(Household Interview)

MINISTRY OF HEALTH
SINGAPORE

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NATIONAL POPULATION HEALTH SURVEY 2021
(Household Interview)
ISBN 978-981-18-4552-9

Suggested Source Citation

Epidemiology & Disease Control Division and Policy, Research & Surveillance Group
Ministry of Health and Health Promotion Board, Singapore

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Foreword

The National Population Health Survey (NPHS) is a cross-sectional population health survey series to monitor the health and risk factors, as well as lifestyle practices of Singapore residents. This survey replaces the three population health surveys (i.e., National Health Survey (NHS), National Health Surveillance Survey (NHSS) and Health Behaviour Surveillance of Singapore (HBSS)) previously conducted by the Ministry of Health and Health Promotion Board respectively.

The NPHS is conducted annually to provide timely and regular information on the prevalence of non-communicable diseases such as diabetes mellitus, hypertension, hyperlipidaemia and related risk factors like smoking, alcohol consumption and physical inactivity from a representative sample of the resident population. The NPHS also captures information on practice of chronic disease and cancer screenings, mental health as well as influenza and pneumococcal vaccination among Singapore residents.

Though there were some improvements in screening participation over the years, the results from NPHS 2021 showed that fewer Singapore residents participated in chronic disease and cancer screenings in 2021 compared to 2019. This might be due to the various safe management measures (SMMs) implemented in the healthcare institutions (e.g., deferment of non-urgent services) to manage the COVID-19 pandemic situation. Some of these SMMs might have also impacted the risk factors as the latest data on smoking and regular exercise have remained similar to 2019, temporarily slowing down the progress made to reduce the smoking prevalence and physical inactivity. The age-standardised prevalence of chronic diseases seemed to have stabilised in recent years even though the crude prevalence continued to increase due to our aging population. These findings from the survey will help the Ministry of Health and Health Promotion Board to develop and evaluate policies and programmes and to improve the health of Singapore residents.

I would like to gratefully acknowledge and thank all who have, in one way or another, contributed to the successful completion of the survey, particularly under the challenging COVID-19 situation. In particular, I would like to thank all respondents who have given their time to take part in the survey, and whose support makes this report possible.

ASSOCIATE PROF KENNETH MAK
Director of Medical Services
November 2022

Executive Summary

The National Population Health Survey (NPHS) is a cross-sectional population health survey conducted annually by the Ministry of Health and Health Promotion Board to monitor the health and risk factors, as well as lifestyle practices of Singapore residents. This survey replaces the three population health surveys (i.e., National Health Survey (NHS), National Health Surveillance Survey (NHSS) and Health Behaviour Surveillance of Singapore (HBSS)) that were conducted in the earlier years.

The NPHS monitors the behavioural risk factors such as smoking and alcohol consumption; chronic diseases such as diabetes mellitus and hypertension as well as preventive health behaviour such as the practice of health screening. The survey findings will be used by the Ministry of Health and Health Promotion Board to track progress towards national heath targets and for planning and evaluation of health policies, programmes, and health care services.

The NPHS consists of two components[1]: (i) Household Interview and (ii) Health Examination. This report presents the survey findings from the Household Interview of all Singapore residents aged 18 to 74 years. The findings from the Health Examination which comprises mainly measured indicators such as obesity and chronic disease prevalence will be reported in 2023 on a two-year survey cycle (i.e., NPHS 2021 – 2022) to ensure that there are enough data for a detailed analysis[2]. The reporting coverage in terms of age differs from previous national health surveys to reflect the growing size of the older population. While the survey results in the earlier publications of the national health surveys were based on Chinese, Malay and Indian residents aged 18 to 69 years, the NPHS report is based on all Singapore residents aged 18 to 74 years. Time-series data for the extended reporting coverage are available from 2007 onwards[3].

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[1] More details on the survey design, method and fieldwork are covered in "Chapter 13: Survey Methodology".

[2] Data collection for the "Health Examination" component requires more efforts and a longer time duration for completion. This is because it requires respondents to attend a health examination/screening at designated locations and hence there are relatively fewer respondents as compared to the "Household Interview" component.

[3] Data from the earlier national health surveys are presented for trend analysis over a longer time period. However, there are differences in the survey design across the health surveys and examination of differences across the survey series should take this into consideration.

Trend analysis is presented when there are sufficient data (inclusive of NHS, NHSS and NPHS) to gauge the directional change of an indicator. Comparison of survey results between 2019 and 2021 is also carried out to highlight changes in the health behaviours and health practices among Singapore residents possibly due to COVID-19 pandemic[4].

Alcohol consumption

- The crude and age-standardised prevalence of regular alcohol consumption increased significantly from 2007 to 2021 (crude: 1.2% in 2007; 2.8% in 2021; age-standardised: 1.2% in 2007; 2.7% in 2021).

- Between 2019 and 2021, the crude prevalence of regular drinking did not change significantly (2.1% in 2019, 2.2% in 2020, 2.8% in 2021).

- In 2021, 4.6% of the males and 1.1% of the females were regular drinkers. Regular alcohol consumption was most common among males in the 50 to 59 years age group (7.2%).

- The rise in both the crude and age-standardised prevalence of binge drinking was significant between 2007 and 2021 (crude: 4.3% in 2007; 9.6% in 2021; age-standardised: 4.2% in 2007; 10.3% in 2021).

- However, the crude prevalence of binge drinking remained stable between 2019 and 2021 (10.2% in 2019, 10.5% in 2020, 9.6% in 2021).

- Binge drinking was more common among males (13.8%) than females (5.6%). Binge drinking was especially common among young adults aged 18 to 29 years, where about one in five (20.4%) males were binge drinkers compared to about one in ten (10.7%) females in 2021.

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[4] NPHS 2021 results are compared with NPHS 2019 results to highlight changes in the health behaviours and health practices among Singapore residents possibly due to COVID-19. Fieldwork for NPHS 2019 was conducted from August 2018 to July 2019 where COVID-19 pandemic had not started yet (pre COVID-19). Fieldwork for NPHS 2020 was affected by COVID-19 as data were collected for only three-quarter of the survey year (July 2019 to March 2020) and fieldwork for April to June 2020 was cancelled due to the Circuit Breaker from 7 April to 1 June 2020 (inclusive). Fieldwork for NPHS 2021 was carried out from July 2020 to June 2021 and it was the first year where data collection was conducted with COVID-19 restrictions.

Cigarette Smoking

- The crude and age-standardised prevalence of daily smoking decreased significantly between 2007 and 2021 (crude: 13.3% in 2007; 10.4% in 2021; age-standardised: 13.3% in 2007; 10.7% in 2021).

- However, between 2019 and 2021, the crude prevalence of daily smoking remained stable at around 10% (10.6% in 2019, 10.1% in 2020, 10.4% in 2021).

- The prevalence of daily smoking was higher among males (17.8%) than females (3.3%) in 2021. Male daily smokers smoked an average of 12 cigarettes a day while female daily smokers smoked an average of 8 cigarettes a day.

- Daily smoking was most prevalent in adults aged 30 to 39 years (12.8%) and least prevalent among younger adults aged 18 to 29 years and older adults aged 60 to 74 years (both 8.3%) in 2021.

- About half (49.4%) of the daily smokers in 2021 had intention to quit smoking. However, only 18.4% of them planned to quit smoking within the next 12 months or less.

Physical Activity

- The crude and age-standardised prevalence of leisure-time regular exercise increased significantly from 2007 to 2021 (crude: 24.1% in 2007; 32.5% in 2021; age-standardised: 24.3% in 2007; 33.4% in 2021).

- Though the crude prevalence of leisure-time regular exercise showed a slight decline since 2019 (35.2% in 2019, 33.4% in 2020, 32.5% in 2021), the changes in prevalence were not significant. The COVID-19 restrictions on recreational facilities (e.g., temporary closure of sports and recreational facilities, gardens, parks and nature reserves) and the preference of most people to stay home to reduce the risk of being infected with COVID-19 might have contributed to the lower prevalence on regular exercise in the last two years.

- In 2021, about one in three (32.5%) Singapore residents aged 18 to 74 years engaged in regular exercise during their leisure time.

- The highest proportion of adults with regular exercise was observed among young adults aged 18 to 29 years (40.5%) while the lowest was among older adults aged 60 to 74 years (24.0%).

- Leisure-time regular exercise was more prevalent among males (37.5%) than females (27.7%).

- The downward trend in the proportion of residents with sufficient total physical activity between 2007 and 2021 was not significant (crude: 82.3% in 2007; 71.1% in 2021; age-standardised: 82.4% in 2007; 71.7% in 2021).

- However, there was a steady significant decrease from 2019 (crude: 80.1%) to 2021 (crude: 71.1%). The new working arrangement (where workdays were split between home and office) and the restrictions on recreational facilities (e.g., temporary closure of sports and recreational facilities, gardens, parks and nature reserves) in the last two years had possibly contributed to the reduction in physical activity across all domains (i.e., work, commuting and leisure-time).

- In 2021, more males (73.0%) compared with females (69.3%) were able to meet this recommended total physical activity level.

- Young adults in the 18 to 29 years age group (76.3%) had the highest level of sufficient total physical activity while the older adults aged 60 to 74 years had the lowest proportion at 65.1%.

- The largest contributor to total physical activity per week was commuting (47.0%), followed by leisure-time physical activity (27.5%) and work-related physical activity (25.5%).

- More than one in three (35.5%) Singapore residents aged 18 to 74 years reported having sufficient muscle-strengthening activities in 2021.

- This was more common among younger adults aged 18 to 39 years (18 to 29 years: 46.4%; 30 to 39 years: 37.0%) while the proportion dropped to around one-third for those aged 40 to 74 years old.

- Males (40.0%) had higher proportion with sufficient muscle-strengthening activities compared with females (31.2%).

Self-reported Diabetes Mellitus

- While the overall crude prevalence of self-reported diabetes showed a significant increasing trend from 2007 (4.9%) to 2021 (6.9%), the upward trend for the age-standardised prevalence was not significant (5.2% in 2007, 5.4% in 2021).

- From 2019 to 2021, the crude prevalence of self-reported diabetes remained stable at around 7% (6.9% in 2019, 7.0% in 2020, 6.9% in 2021),

- In 2021, about one in 15 (6.9%) Singapore residents aged 18 to 74 years reported that they had diabetes mellitus and were currently prescribed medication.

- Slightly more males (7.6%) reported having diabetes than females (6.2%).

- The prevalence of self-reported diabetes mellitus increased with age, from 0.9% in young adults aged 30 to 39 years to 18.3% among those aged 60 to 69 years and reached 21.7% among those aged 70 to 74 years.

Self-reported Hypertension (or High Blood Pressure)

- Both the overall crude and age-standardised prevalence of self-reported hypertension did not show significant upward trend from 2007 to 2021 (crude: 12.7% in 2007; 15.7% in 2021; age-standardised: 13.4% in 2007; 12.4% in 2021).

- From 2019 to 2021, the crude prevalence of self-reported hypertension remained stable around 16% (15.6% in 2019, 15.1% in 2020, 15.7% in 2021),

- In 2021, about one in six (15.7%) Singapore residents aged 18 to 74 years reported that they had hypertension (or high blood pressure) and were currently prescribed medication.

- More males (17.2%) reported having hypertension than females (14.2%).

- The prevalence of self-reported hypertension increased with age, from 2.0% in young adults aged 30 to 39 years to 37.8% among those aged 60 to 69 years and reached 52.7% among those aged 70 to 74 years.

Self-reported Hyperlipidaemia (or High Blood Cholesterol)

- The overall crude prevalence of self-reported hyperlipidaemia showed an increasing trend from 2007 (8.2%) to 2021 (13.9%) but the age-standardised prevalence did not show similar significant increasing trend (8.7% in 2007, 10.8% in 2021).

- From 2019 to 2021, the crude prevalence of self-reported hyperlipidaemia remained stable at around 14% (13.6% in 2019, 13.1% in 2020, 13.9% in 2021),

- In 2021, about one in seven (13.9%) Singapore residents aged 18 to 74 years reported that they had hyperlipidaemia (or high blood cholesterol) and were currently prescribed medication.

- More males (15.2%) reported having high blood cholesterol than females (12.6%).
- The prevalence of self-reported high blood cholesterol increased with age, from 1.1% in young adults aged 30 to 39 years to 35.8% among those aged 60 to 69 years and reached 43.4% among those aged 70 to 74 years.

Chronic Disease Screening

- The proportion of Singapore residents aged 40 to 74 years with no previous diagnosed chronic diseases (i.e., diabetes mellitus, high blood pressure, and high blood cholesterol ("DHL")) and were screened for these three conditions within the recommended screening frequencies displayed no significant upward trend over the period 2007 to 2021.
- The screening participation for residents with no previous diagnosis of DHL in 2021 (59.2%) was significantly lower compared with 2019 (66.3%). The lower screening participation could be due to deferment of non-urgent services e.g., health screening in healthcare institutions arising from the COVID-19 situation in the last two years.
- Looking at individual chronic disease alone regardless of the co-morbidity with other chronic diseases, the crude proportion of residents who had diabetes and hypertension screening increased significantly from 2007 to 2021 while the proportion for hyperlipidaemia did not show significant upward trend over the same period.
- Between 2019 and 2021, the screening participation for all three chronic diseases in 2021 were significantly lower compared with 2019 (diabetes: 81.0% in 2019, 78.5% in 2020, 76.6% in 2021; hypertension: 86.0% in 2019, 83.3% in 2020, 82.4% in 2021; hyperlipidaemia: 77.9% in 2019, 76.5% in 2020, 72.5% in 2021).
- Based on individual disease alone, 76.6% of adults aged 40 to 74 years without known diabetes were screened for diabetes within the past three years in 2021, 82.4% of those without known high blood pressure had their blood pressure checked within the past two years, and 72.5% of those with no previous diagnosis of high blood cholesterol were screened for this disease within the past three years.

Cancer Screening

- Although the crude screening participation for breast and cervical cancer showed decreasing trend between 2007 and 2021, the decline was significant for cervical cancer (57.9% in 2007 to 41.0% in 2021) but not so for breast cancer (41.0% in 2007 to 31.1% in 2021). The age-standardised screening participation for both breast and cervical cancers did not show significant downward trend (breast: 41.2% in 2007 to 32.0% in 2021; cervical: 57.5% in 2007 to 42.7%) in the same period.

- The crude and age-standardised screening participation for colorectal cancer rose significantly between 2007 and 2021 (crude: 14.6% in 2007 to 36.6% in 2021, age-standardised: 14.6% in 2007 to 35.9% in 2021).

- Comparing between 2019 and 2021, the screening participations for all three cancers in 2021 were significantly lower than 2019 (breast cancer: 38.7% in 2019, 37.9% in 2020, 31.1% in 2021; cervical cancer: 48.2% in 2019, 45.4% in 2020, 41.0% in 2021; colorectal; 42.0% in 2019, 41.1% in 2020, 36.6% in 2021). The lower screening participation in 2021 was probably due to the COVID-19 situation (e.g., deferment of non-urgent services such as health screening) in the last two years.

Breast Cancer Screening:

- In 2021, close to one-third (31.1%) of Singapore women in the 50 to 69 years age group reported that they had gone for mammography in the last two years.

Cervical Cancer Screening

- In 2021, about two in five (41.0%) women reported that they had gone for a cervical cancer screening (had done a Pap smear test in the past three years or a HPV test in the past five years).

- Women aged 30 to 59 years were most likely to have undergone cervical cancer screening.

Colorectal Cancer Screening

- Overall in 2021, 36.6% of Singapore residents aged 50 to 74 years had undergone colorectal screening within the recommended screening frequency.

- Close to one in five (19.0%) of these residents reported having undergone Faecal Occult Blood Test (FOBT) at least once in the past one year while about one in four (26.0%) had undergone colonoscopy in the past 10 years.

- The practice of taking a FOBT or a colonoscopy was more prevalent among males (39.1%) than females (34.2%).

Vaccination

- The overall self-reported influenza vaccination (a flu injection in the past 12 months) among Singapore residents aged 18 to 74 years did not show significant increasing trend between 2017 and 2021.

- Arising possibly from greater awareness about the importance of vaccination due to COVID-19, the proportion of older residents aged 65 to 74 who reported having influenza vaccination rose significantly in 2021 (32.4%) compared with 2019 (24.2%).

- Almost one in five (18.7%) Singapore residents aged 18 to 74 years reported they had an influenza injection in 2021, with more females (19.1%) having influenza vaccination compared with males (18.4%).

- Despite a significant increase in the self-reported pneumococcal vaccination among Singapore residents aged 65 to 74 years from 10.3% in 2019 to 22.4% in 2021, the increase in vaccination over a longer period from 2017 to 2021 was however not significant.

- The self-reported pneumococcal vaccination in 2021 was higher in females (22.8%) than males (21.9%).

Mental Health

- Between 2019 and 2021, the proportion of residents who were willing to seek help from healthcare professionals (if they were constantly unable to cope with stress) increased significantly between 2019 (47.8%) and 2021 (58.3%). However, the proportion of residents who were willing to seek help from informal support networks dropped significantly between 2019 (74.5%) and 2021 (69.1%).

- In 2021, Singapore residents aged 18 to 74 years were more willing to seek help informally from their social circle (69.1%) than formally from healthcare professionals (58.3%).

- Females were more willing to seek help from healthcare professionals and informal support networks compared to males in 2021.

- Among the age groups, Singapore residents aged 60 to 74 years (45.8%) were the least willing to seek help from healthcare professionals while those aged 30 to 39 years (67.7%) were the most willing to seek help from healthcare professionals in 2021.

- Similarly, the willingness to seek help from informal support networks decreased with age, it was the highest among younger adults aged 18 to 29 years (84.3%) and the lowest among older adults aged 60 to 74 years (50.3%) in 2021.

Chapter 1
Alcohol Consumption

Key Points

- 2.8% of Singapore residents aged 18 to 74 years consumed alcohol regularly in 2021, with 4.6% of the males and 1.1% of the females being regular drinkers.

- Regular alcohol consumption was most common among males in the 50 to 59 years age group (7.2%).

- The prevalence of binge drinking was 9.6% in 2021, and it was more common among males (13.8%) than females (5.6%).

- Young adults in the 18 to 29 years age group were most likely to binge drink compared to the other age groups, especially among males where about one in five (20.4%) were binge drinkers compared to about one in ten (10.7%) females.

Introduction

Alcohol is a toxic and psychoactive substance with dependence producing properties. Alcohol consumption is a major contributor to the global burden of disease. Several diseases such as liver and pancreas disease, neuropsychiatric disease, cardiovascular diseases and certain cancers, are entirely or partially caused by alcohol consumption. In addition to these disease risks that affect the drinkers in the long run, alcohol consumption can also cause immediate social harm to both the drinkers and the other people around. The impact of alcohol intake is largely determined by the pattern of drinking and volume of alcohol consumed *(WHO 2018)*.

Definition

Alcohol consumption was classified according to the frequency of alcohol intake in Table 1.1.

Table 1.1: Classification of alcohol consumption

Classification	Frequency of alcohol consumption
Regular drinker	> 4 days a week
Frequent drinker	1 – 4 days a week
Occasional drinker	≤ 3 days a month

Binge drinking was defined as consumption of at least five alcoholic drinks[5] for males or at least four alcoholic drinks for females in any single drinking session during the past month preceding the survey.

Method Used

An interviewer-administered questionnaire was used. Respondents were shown a card with pictures of standard alcoholic drinks (Diagram 1) and asked questions on alcohol consumption within the past 12 months at the time of the survey.

Diagram 1: Alcohol Card
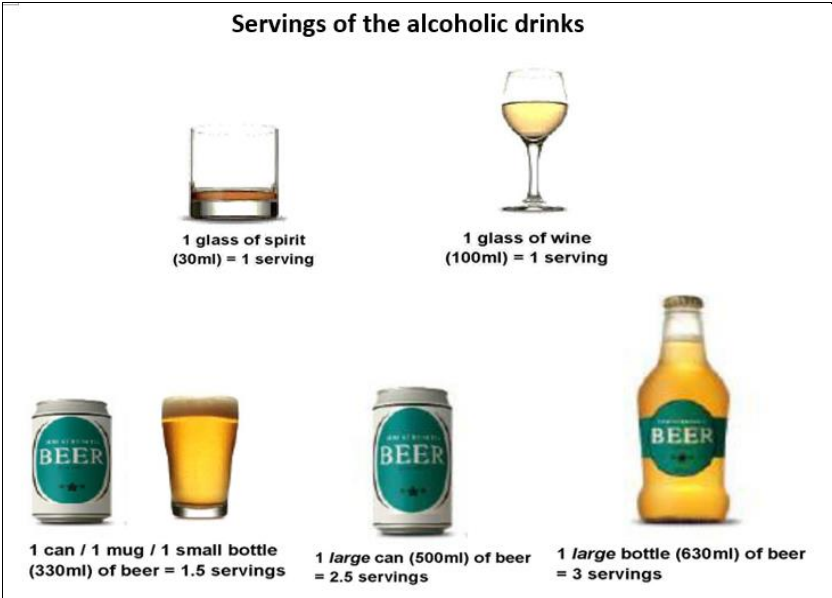
Alcohol Consumption

The survey found that among Singapore residents aged 18 to 74 years, 2.8% consumed alcohol regularly, 11.3% frequently, 30.7% occasionally and 55.2% were non-drinkers (Table 1.2).

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[5] 1 alcoholic drink refers to 1 glass (~100 mls) of wine or 1 measure (~30 mls) of spirits.1 can/ mug/ small bottle (330ml) of beer represents 1.5 servings of alcoholic drink.

Table 1.2: Alcohol consumption (%) among Singapore residents aged 18 to 74 years by gender, 2021

Alcohol Consumption	Total	Males	Females
Non-drinker	55.2	46.2	63.7
Occasional drinker	30.7	33.6	28.0
Frequent drinker	11.3	15.6	7.2
Regular drinker	2.8	4.6	1.1

Prevalence of Regular Alcohol Consumption

Among Singapore residents aged 18 to 74 years, 4.6% of the males and 1.1% of the females consumed alcohol regularly (Table 1.3). Regular alcohol consumption was most common among males in the 50 to 59 years age group (7.2%). Among the ethnic groups, regular drinking was most common in Chinese (3.2%) (Graph 1.1). A slightly higher proportion of residents with primary education (2.9%) and post-secondary education (2.9%) were regular drinkers, compared to those with secondary education (2.5%) (Table 1.4).

Table 1.3: Age-specific crude prevalence (%) of regular alcohol consumption among Singapore residents aged 18 to 74 years by gender, 2021

Age (years)	Total	Males	Females
18-29	s	s	s
30-39	1.7	2.5	s
40-49	2.7	4.2	1.4
50-59	3.9	7.2	s
60-74	3.2	5.3	1.2
18-74	2.8	4.6	1.1

s: Data have been suppressed due to small counts or high sampling variability.

Graph 1.1: Crude prevalence (%) of regular alcohol consumption among Singapore residents aged 18 to 74 years by gender and ethnicity, 2021
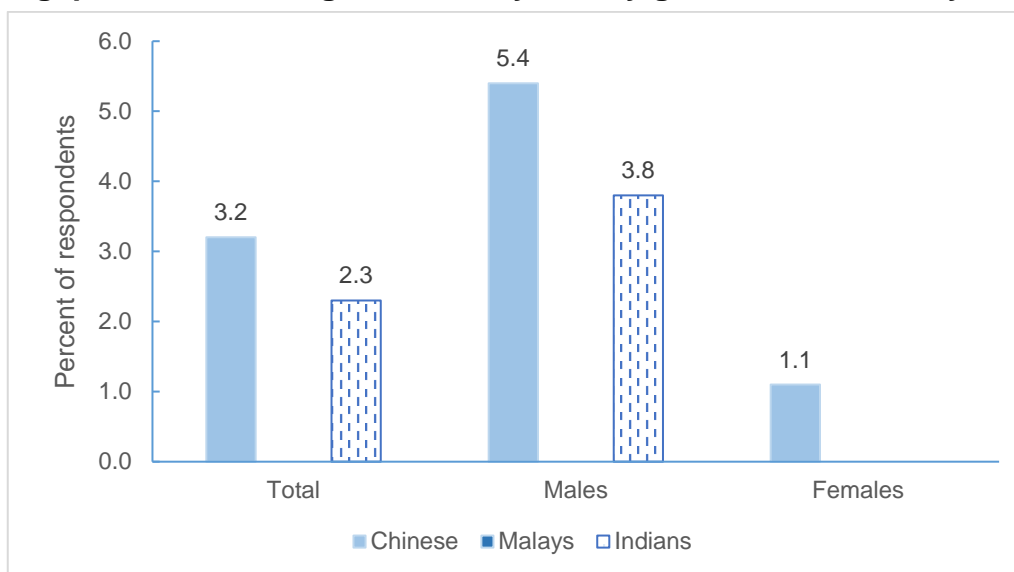
Note: Data for Malays and Indian females have been suppressed due to small counts or high sampling variability.

Trends in Regular Alcohol Consumption

The crude and age-standardised prevalence of regular alcohol consumption increased significantly from 2007 to 2021 (Table 1.4). The significant rise in prevalence of regular drinking was observed mainly among adults aged 30 to 49 years, males, Chinese, and those with post-secondary education. Between 2019 and 2021, the prevalence of regular drinking did not change significantly.

Table 1.4: Crude prevalence (%) of regular alcohol consumption among Singapore residents aged 18 to 74 years by age, gender, education, and ethnicity, 2007 to 2021

	NHSS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2013	2017	2019	2020	2021
Total	1.2	1.2	2.2 (1.6, 2.7)	2.1 (1.6, 2.6)	2.2 (1.7, 2.6)	2.8[b] (2.1, 3.4)
ASR	1.2	1.2	2.1	1.9	2.1	2.7[b]
18-29	s	s	s	s	s	s
30-39	0.9	s	s	1.1 (0.5, 1.8)	1.8 (0.9, 2.8)	1.7[b] (1.0, 2.5)
40-49	1.2	2.0	2.3 (1.1, 3.4)	2.1 (1.0, 3.1)	2.0 (1.2, 2.8)	2.7[b] (1.6, 3.9)
50-59	1.9	1.5	3.8 (2.1, 5.4)	2.4 (1.3, 3.4)	3.4 (2.2, 4.6)	3.9 (2.7, 5.1)
60-74	s	1.4	3.7 (2.0, 5.4)	4.3 (2.7, 5.9)	3.0 (2.1, 3.8)	3.2 (2.3, 4.1)
Males	2.1	2.0	3.7 (2.7, 4.8)	3.6 (2.6, 4.5)	3.4 (2.7, 4.1)	4.6[b] (3.3, 5.8)
Females	s	0.4	s	0.7 (0.3, 1.0)	1.0 (0.6, 1.4)	1.1 (0.7, 1.4)
Primary	1.5	1.8	s	3.3 (1.9, 4.6)	3.2 (1.9, 4.4)	2.9 (1.8, 4.0)
Secondary	1.3	1.6	2.6 (1.4, 3.7)	2.3 (1.4, 3.1)	1.9 (1.3, 2.5)	2.5 (1.8, 3.3)
Post-secondary	1.0	0.8	1.9 (1.1, 2.7)	1.7 (1.1, 2.3)	2.1 (1.5, 2.6)	2.9[b] (1.9, 3.8)
Chinese	1.3	1.3	2.3 (1.6, 2.9)	2.2 (1.6, 2.8)	2.4 (1.9, 2.9)	3.2[b] (2.3, 4.0)
Malays	s	s	s	s	s	s
Indians	s	1.0	s	s	s	2.3 (1.2, 3.3)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) s: Data have been suppressed due to small counts or high sampling variability.

(3) ASR: Age-standardised rate. The reference population used is Singapore Census 2010 resident population.

(4) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(5) [b] Indicate statistically significant linear upward trend between 2007 and 2021 with p-value <0.05.

Prevalence of Binge Drinking

Among Singapore residents aged 18 to 74 years, the prevalence of binge drinking was 9.6% (Table 1.5). Binge drinking was more prevalent among males (13.8%) than females (5.6%). Both genders had the highest proportion of binge drinkers in the 18 to 29 years age group (males: 20.4%, females: 10.7%). Among the ethnic groups, the prevalence of binge drinking was higher in Indians (10.6%) and Chinese (10.2%) than Malays (2.1%) (Graph 1.2). The proportion of binge drinkers was higher among those with post-secondary education (11.7%), compared to those with lower education levels (primary education: 4.8%, secondary education: 6.6%) (Table 1.6).

Table 1.5: Age-specific crude prevalence (%) of binge drinking among Singapore residents aged 18 to 74 years by gender, 2021

Age (years)	Total	Males	Females
18-29	15.6	20.4	10.7
30-39	12.8	16.9	9.0
40-49	9.7	13.8	5.9
50-59	6.4	11.0	1.8
60-74	4.3	7.5	1.1
18-74	9.6	13.8	5.6

Graph 1.2: Crude prevalence (%) of binge drinking among Singapore residents aged 18 to 74 years by gender and ethnicity, 2021
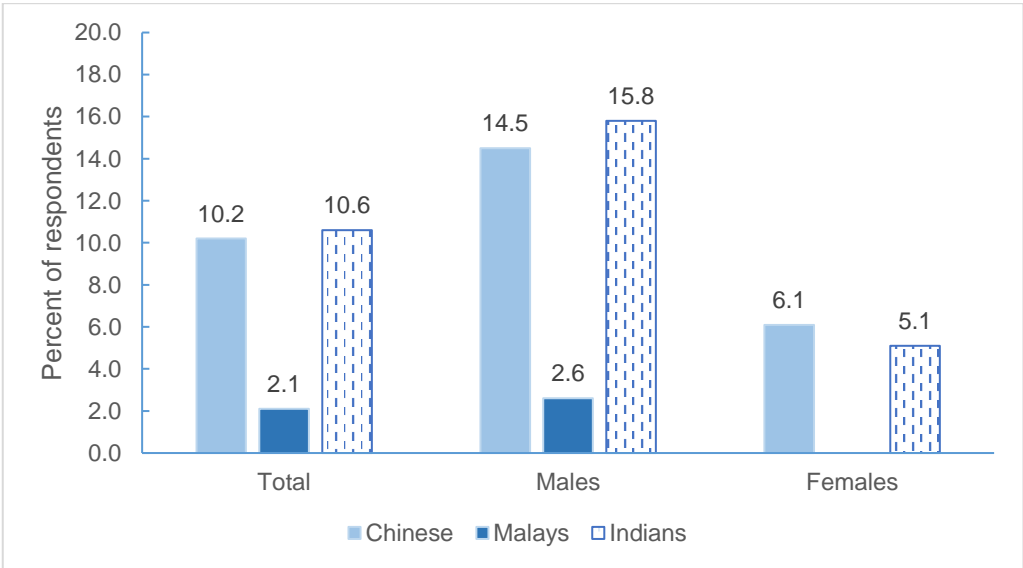
Note: Data for Malay females have been suppressed due to small counts or high sampling variability.

Trends in Binge Drinking

The rise in both the crude and age-standardised prevalence of binge drinking was significant between 2007 and 2021 (Table 1.6). This upward trend was also observed in all age groups except those aged 60 to 74 years, in both genders, among Chinese and Indians; and those with post-secondary education over the same period between 2007 and 2021. Between 2019 and 2021, the prevalence of binge drinking remained stable.

Table 1.6: Crude prevalence (%) of binge drinking among Singapore residents aged 18 to 74 years by age, gender, education, and ethnicity, 2007 to 2021

	NHSS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2013	2017	2019	2020	2021
Total	4.3	7.4	8.8 (7.6, 10.0)	10.2 (9.1, 11.3)	10.5 (9.5, 11.5)	9.6[b] (8.6, 10.6)
ASR	4.2	7.3	9.1	10.7	11.2	10.3[b]
18-29	8.1	14.6	12.4 (9.2, 15.6)	16.6 (13.5, 19.7)	17.1 (13.8, 20.3)	15.6[b] (12.0, 19.3)
30-39	4.6	7.7	10.6 (7.5, 13.7)	13.8 (10.9, 16.6)	14.5 (12.0, 17.0)	12.8[b] (10.7, 14.9)
40-49	3.7	5.3	9.3 (6.8, 11.7)	8.8 (6.8, 10.7)	9.6 (7.7, 11.6)	9.7[b] (7.9, 11.5)
50-59	2.3	4.9	7.3 (5.0, 9.7)	6.9 (5.0, 8.8)	6.8 (5.1, 8.5)	6.4[b] (4.9, 7.8)
60-74	s	3.2	4.0 (2.4, 5.7)	5.0 (3.4, 6.6)	4.9 (3.5, 6.2)	4.3 (3.2, 5.3)
Males	6.4	10.7	13.1 (11.1, 15.1)	14.9 (13.1, 16.6)	14.6 (13.0, 16.3)	13.8[b] (12.1, 15.5)
Females	2.2	4.2	4.7 (3.4, 6.0)	5.7 (4.6, 6.8)	6.5 (5.3, 7.7)	5.6[b] (4.5, 6.7)
Primary	3.1	2.7	4.2 (2.3, 6.2)	5.4 (3.6, 7.2)	4.4 (2.9, 5.9)	4.8 (3.2, 6.3)
Secondary	4.5	5.7	8.4 (6.5, 10.4)	7.3 (5.9, 8.7)	7.5 (6.0, 8.9)	6.6 (5.4, 7.8)
Post-secondary	4.5	9.8	10.3 (8.6, 12.0)	12.5 (10.9, 14.2)	13.0 (11.5, 14.5)	11.7[b] (10.2, 13.1)

Table 1.6: Crude prevalence (%) of binge drinking among Singapore residents aged 18 to 74 years by age, gender, education, and ethnicity, 2007 to 2021 (continued)

	NHSS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2013	2017	2019	2020	2021
Chinese	4.7	8.6	9.4 (8.0, 10.9)	11.5 (10.1, 12.8)	11.6 (10.3, 12.8)	10.2[b] (9.0, 11.4)
Malays	1.1	1.5	s	2.3 (1.0, 3.6)	1.7 (0.7, 2.7)	2.1 (1.0, 3.2)
Indians	4.5	6.6	13.4 (9.2, 17. 6)	10.5 (7.8, 13.1)	11.4 (7.9, 14.8)	10.6[b] (6.3, 14.8)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) s: Data have been suppressed due to small counts or high sampling variability.

(3) ASR: Age-standardised rate. The reference population used is Singapore Census 2010 resident population.

(4) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(5) [b] Indicate statistically significant linear upward trend between 2007 and 2021 with p-value <0.05.

Chapter 2
Cigarette Smoking

Key Points

- 10.4% of Singapore residents aged 18 to 74 years smoked cigarettes daily in 2021.

- More males (17.8%) smoked daily than females (3.3%).

- Daily smoking was most prevalent in adults aged 30 to 39 years (12.8%) and least prevalent among younger adults aged 18 to 29 years and older adults in the 60 to 74 years (both 8.3%) in 2021.

- Male daily smokers smoked an average of 12 cigarettes a day while female daily smokers smoked an average of 8 cigarettes a day.

- About half (49.4%) of the daily smokers had intention to quit smoking. However, only 18.4% of them planned to quit smoking within the next 12 months or less.

Introduction

Tobacco use is a source of preventable morbidity and mortality. Active smoking increases the risk of several diseases such as respiratory diseases, cardiovascular diseases and certain cancers. In addition to these disease risks that affect the smokers, smoking also implicates the other people around who are exposed to second-hand smoke. Cigarette smoking is the most common form of smoking. The impact of tobacco use is largely determined by the pattern of smoking and number of cigarettes smoked *(US Department of Health and Human Services, 2014).*

Definition

Smoking status was classified according to the frequency of cigarette smoked as shown in Table 2.1, which followed the World Health Organization (WHO) classification criteria *(WHO, 1998)*.

Table 2.1: Classification of smoking status

Classification	Frequency of cigarette smoking
Daily smoker	Smokes cigarettes at least once a day (including people who smoke every day but have to stop temporarily because of religious fasting or medical reasons)
Occasional smoker	Smokes cigarettes but not every day
Ex-smoker	Formerly a daily smoker, but currently does not smoke at all
Non-smoker	Never smoked before or smoked too little in the past to be regarded as an ex-smoker

Method Used

An interviewer-administered questionnaire was used. The questionnaire was based on WHO's recommended core questions for assessing smoking status *(WHO,1998)*.

Smoking Status

The survey showed that among Singapore residents aged 18 to 74 years, 10.4% were daily smokers, 3.0% were occasional smokers, 7.7% were ex-smokers and 79.0% were non-smokers (Table 2.2).

Table 2.2: Smoking status (%) of Singapore residents aged 18 to 74 years by gender, 2021

Smoking Status	Total	Males	Females
Daily smoker	10.4	17.8	3.3
Occasional smoker	3.0	4.9	1.1
Ex-smoker	7.7	12.2	3.4
Non-Smoker	79.0	65.1	92.3

Note: Data might not sum to 100% due to rounding.

Prevalence of Daily Smoking

The prevalence of daily smoking among Singapore residents aged 18 to 74 years was 17.8% among males and 3.3% among females (Table 2.3). Daily smoking was most prevalent in the 30 to 39 years age group for both genders (males: 20.8%, females: 5.5%). Daily smoking prevalence was higher among Malays (22.4%) than Chinese (8.6%) and Indians (9.2%) (Graph 2.1). The prevalence of daily smoking among Singapore residents with below post-secondary education (primary education: 16.5%, secondary education: 15.5%) was about two times higher than residents with post-secondary education (7.2%) (Table 2.4).

Table 2.3: Age-specific crude prevalence (%) of daily smoking among Singapore residents aged 18 to 74 years by gender, 2021

Age (years)	Total	Males	Females
18-29	8.3	14.4	2.1
30-39	12.8	20.8	5.5
40-49	11.6	18.8	5.0
50-59	11.3	20.0	2.8
60-74	8.3	15.7	1.1
18-74	10.4	17.8	3.3

Graph 2.1: Crude prevalence (%) of daily smoking among Singapore residents aged 18 to 74 years by gender and ethnicity, 2021
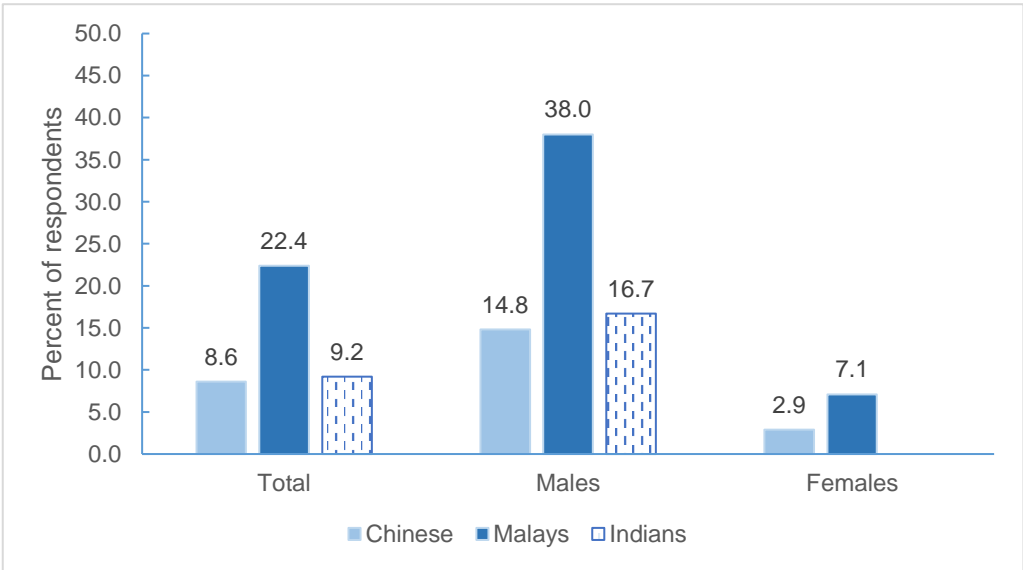
Note: Data for Indian females have been suppressed due to small counts or high sampling variability.

Age of Initiation and Onset of Daily Smoking Among Daily Smokers

Among Singapore residents who are daily smokers, the mean age of initiation, or the age at which they first tried smoking, was 17 years old. The mean age at which they established their habit of daily smoking was 19 years old. Among the younger daily smokers aged 18 to 24 years, the mean age of initiation and age at which they established their daily smoking habit was 16 and 17 years old respectively.

Smoking Intensity of Daily Smokers

The mean number of cigarettes smoked per day among the daily smokers was 11 cigarettes. Male daily smokers on average smoked more cigarettes per day (12 cigarettes) than female daily smokers (8 cigarettes). Daily smokers in the 60 to 74 years age group on average smoked the highest number of cigarettes per day (13 cigarettes), compared to the other age groups.

Quit Intention of Daily Smokers

About half (49.4%) of the daily smokers had intention to quit smoking. However, only about one in five (18.4%) daily smokers planned to quit smoking within the next 12 months or less. Slightly more than one in four (27.5%) daily smokers indicated that they did not plan to quit smoking at all but planned to cut down on the number of cigarettes smoked. About one in four (23.1%) daily smokers did not plan to quit smoking or reduce the number of cigarettes smoked. Daily smokers who had abstained from smoking for a period of at least 24 hours in the past 12 months reported that on average they had tried quitting smoking three times during the past 12 months preceding the survey.

Trends in Daily Smoking

The crude and age-standardised prevalence of daily smoking decreased significantly between 2007 and 2021 (Table 2.4). This downward trend was also significant in younger adults aged 18 to 29 years, in both males and females, among the Chinese and those with post-secondary education over the same period.

Although the overall crude prevalence of daily smoking remained stable from 2019 (10.6%) to 2021 (10.4%), there were some increases among the 30 to 49 years age group, and those with post-secondary education over the last three years, though these increases were not significant.

Table 2.4: Crude prevalence (%) of daily smoking among Singapore residents aged 18 to 74 years by age, gender, education, and ethnicity, 2007 to 2021

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021
Total	13.3	13.9	13.1	11.8 (10.6, 13.0)	10.6 (9.5, 11.7)	10.1 (9.2, 11.0)	10.4[c] (9.6, 11.2)
ASR	13.3	13.9	13.2	12.0	10.6	10.3	10.7[c]
18-29	17.4	16.0	12.6	9.8 (7.1, 12.5)	8.4 (6.5, 10.2)	8.8 (6.8, 10.8)	8.3[c] (6.2, 10.4)
30-39	12.5	16.0	14.7	12.6 (9.5, 15.7)	11.4 (9.3, 13.5)	9.9 (7.9, 11.8)	12.8 (10.9, 14.7)
40-49	12.8	14.3	15.4	14.5 (11.6, 17.4)	10.6 (8.7, 12.5)	10.6 (8.5, 12.7)	11.6 (9.5, 13.7)
50-59	12.7	11.4	13.3	11.9 (9.2, 14.6)	12.6 (10.0, 15.2)	13.4 (10.8, 16.0)	11.3 (9.4, 13.3)
60-74	9.8	10.1	8.5	10.2 (7.5, 12.8)	10.2 (8.0, 12.4)	8.0 (6.5, 9.5)	8.3 (6.9, 9.6)
Males	23.1	24.0	23.0	20.6 (18.5, 22.8)	18.4 (16.3, 20.5)	17.0 (15.4, 18.6)	17.8[c] (16.3, 19.3)
Females	3.8	4.1	3.6	3.3 (2.3, 4.3)	3.2 (2.4, 3.9)	3.4 (2.5, 4.3)	3.3[c] (2.6, 4.0)
Primary	16.3	19.4	15.8	17.2 (13.6, 20.9)	18.3 (15.2, 21.4)	16.5 (13.7, 19.3)	16.5 (13.5, 19.5)
Secondary	18.0	18.1	19.6	17.5 (14.8, 20.2)	16.7 (14.3, 19.0)	16.4 (14.2, 18.6)	15.5 (13.6, 17.3)
Post-secondary	8.4	9.3	8.3	6.9 (5.6, 8.2)	6.1 (5.1, 7.1)	6.0 (5.0, 6.9)	7.2[c] (6.3, 8.1)
Chinese	12.0	12.6	11.5	9.9 (8.6, 11.2)	8.6 (7.5, 9.7)	8.6 (7.7, 9.5)	8.6[c] (7.8, 9.5)
Malays	23.0	26.1	24.9	23.1 (19.0, 27.3)	23.0 (19.4, 26.6)	21.1 (17.3, 24.9)	22.4 (19.1, 25.8)
Indians	11.1	10.0	10.5	12.6 (8.4, 16.9)	10.9 (8.0, 13.8)	8.9 (6.0, 11.9)	9.2 (6.8, 11.7)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2010 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [c] Indicate statistically significant linear downward trend between 2007 and 2021 with p-value <0.05.

Chapter 3
Physical Activity

Key Points

- About one in three (32.5%) Singapore residents aged 18 to 74 years engaged in regular exercise during their leisure time in 2021.

- The highest proportion of adults with regular exercise was observed among young adults aged 18 to 29 years (40.5%) while the lowest was among older adults aged 60 to 74 years (24.0%).

- Leisure-time regular exercise was more prevalent among males (37.5%) than females (27.7%).

- Based on all domains of physical activity (including work-related, transportation-related and leisure-time), 71.1% of Singapore residents had sufficient total physical activity in 2021.

- More males (73.0%) compared with females (69.3%) were able to meet this recommended total physical activity level.

- Young adults in the 18 to 29 years age group (76.3%) had the highest level of sufficient total physical activity while the older adults aged 60 to 74 years had the lowest proportion at 65.1%.

- The largest contributor to total physical activity per week was commuting (47.0%), followed by leisure-time physical activity (27.5%) and work-related physical activity (25.5%).

- More than one in three (35.5%) Singapore residents aged 18 to 74 years reported having sufficient muscle-strengthening activities in 2021.

- This was more common among younger adults aged 18 to 39 years (18 to 29 years: 46.4%; 30-39 years: 37.0%) while the proportion dropped to around one-third for those aged 40 to 74 years old.

- Males (40.0%) had higher proportion with sufficient muscle-strengthening activities compared with females (31.2%).

Introduction

Physical activity is important for maintaining good health for all ages. For adults, it has been shown to reduce the risk of premature death in general and in particular the risk of developing cardiovascular diseases, hypertension and diabetes mellitus. In addition, physical activity improves mental and cognitive health, sleep and prevents unhealthy weight gain. In older adults aged 65 years and above who are physically active, they are less likely to experience falls and falls-related injuries and have better functional capacity and mobility to live longer independently *(US Department of Health and Human Services 2018; WHO 2020; WHO 2010).*

Definition of Leisure-Time Physical Activity

Leisure-time physical activity focuses on participation in sports, exercise and recreation activity independent of the work and transportation domain. The classification for leisure-time physical activity was adapted from the American College of Sports Medicine's classification (Table 3.1) (*American College of Sports Medicine, 1998*).

Table 3.1: Classification of leisure-time physical activity participation

Classification	Frequency of leisure-time physical activity
Regular exercise	Participation in any form of sports or exercise for at least 20 minutes per occasion, for three or more days a week
Occasional exercise	Participation in any form of sports or exercise for at least 20 minutes per occasion, for less than three days a week
No exercise (Physically inactive)	No participation in any form of sports or exercise that lasted for at least 20 minutes per occasion in a week

Method Used

An interviewer-administered questionnaire was used. Respondents were asked about the frequency, duration and intensity of physical activity in the domain of work, transportation and leisure using the Global Physical Activity Questionnaire (GPAQ) developed by WHO (*WHO 2010*).

Leisure-time Physical Activity Participation Status

The survey found that among Singapore residents aged 18 to 74 years, about one-third (32.5%) exercised regularly, 19.3% exercised occasionally, and 48.2% did not exercise at all (Table 3.2).

Table 3.2: Leisure-time physical activity participation status (%) of Singapore residents aged 18 to 74 years by gender, 2021

Physical Activity Participation	Total	Males	Females
Regular exercise	32.5	37.5	27.7
Occasional exercise	19.3	19.7	19.0
No exercise (physically inactive)	48.2	42.8	53.3

Prevalence of Leisure-time Regular Exercise

A higher proportion of males (37.5%) than females (27.7%) exercised regularly (Table 3.3). There was a general decline in the prevalence of regular exercise with increasing age. The highest proportion was observed among young adults aged 18 to 29 years (40.5%) before decreasing to around one-third between the ages of 30 to 59 years and a quarter (24.0%) among older adults aged 60 to 74 years. Females aged 60 to 74 years had the lowest participation in regular exercise (18.9%) across all age groups and gender. Males in the 18 to 29 years age group had the highest participation in regular exercise at 47.3% but this participation dropped steadily with increasing age, reaching about three in 10 (29.3%) among males aged 60 to 74 years.

Table 3.3: Age-specific crude prevalence (%) of leisure-time regular exercise among Singapore residents aged 18 to 74 years by gender, 2021

Age (years)	Total	Males	Females
18-29	40.5	47.3	33.8
30-39	32.6	39.6	26.3
40-49	33.8	35.1	32.6
50-59	32.5	36.8	28.2
60-74	24.0	29.3	18.9
18-74	32.5	37.5	27.7

Among the ethnic groups, Indians (42.7%) had the highest participation level in regular exercise and for both genders, followed by Chinese (32.1%) and Malays (23.9%). (Graph 3.1). Close to half (45.9%) of all Indian men exercised regularly compared to 37.6% of Chinese and 27.3% of Malay men. Malay women had the lowest participation level with about one in five (20.5%) having regular exercise. By education attainment, the proportion of residents with post-secondary education (39.7%) who exercised regularly was more than 2.5 times higher than those with primary education (14.7%) and more than 1.5 times higher than those with secondary education (22.6%) (Table 3.4).

Graph 3.1: Crude prevalence (%) of leisure-time regular exercise among Singapore residents aged 18 to 74 years by gender and ethnicity, 2021
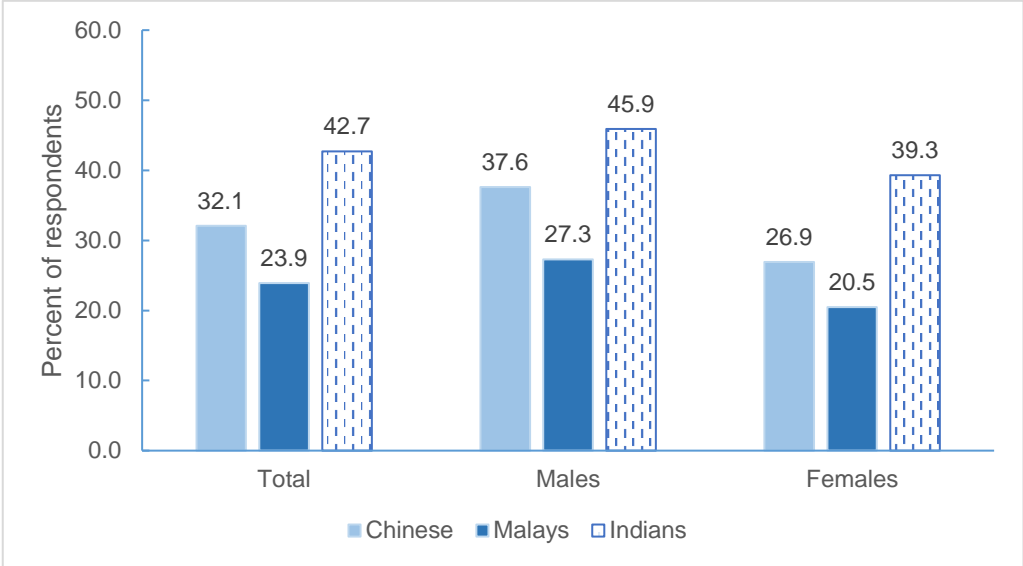
Reasons for Being Physically Inactive

Among Singapore residents aged 18 to 74 years who did not participate in any sports, exercise and recreation activity during their leisure time, the following reasons for being physically inactive were cited: "No time due to work/ family commitments" (39.0%), "Stop exercising due to COVID-19" (15.6%), "Too lazy" (12.0%) and "Too tired due to work commitment" (9.5%).

Trends in Leisure-time Regular Exercise

The crude and age-standardised prevalence of leisure-time regular exercise increased significantly from 2007 to 2021 (Table 3.4). The significant increases were also presented among adults between the ages of 18 to 49 years, males, Chinese and those with post-secondary education.

Though the prevalence of leisure-time regular exercise showed a slight decline since 2019 (35.2% in 2019, 33.4% in 2020, 32.5% in 2021), the changes in prevalence were not significant. Similarly, across most subgroups, the prevalence of regular exercise fluctuated from 2019 to 2021 and the differences were largely insignificant except for older residents aged 60 to 74 years and residents with secondary education. This reduction in regular exercise for the older residents (2019: 30.3%, 2021: 24.0%) could be due to the COVID-19 advisories that urged seniors to stay at home; and minimise group activities and social gatherings in hope of reducing their risk of being infected with COVID-19. Regular exercise among residents with secondary education was also lower in 2021 (22.6%) compared with 2019 (28.5%).

Table 3.4: Crude prevalence (%) of leisure-time regular exercise among Singapore residents aged 18 to 74 years by age, gender, education, and ethnicity, 2007 to 2021

	NHSS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2013	2017	2019	2020	2021
Total	24.1	23.5	29.6	35.2	33.4	32.5[b]
			(27.4, 31.8)	(33.3, 37.2)[a]	(31.9, 34.9)	(31.1, 33.9)
ASR	24.3	23.4	29.9	35.8	33.8	33.4[b]
18-29	28.2	33.5	37.1	46.9	41.2	40.5[b]
			(32.0, 42.1)	(42.5, 51.3)[a]	(37.4, 45.0)	(36.5, 44.6)
30-39	18.8	20.9	33.4	34.2	30.0	32.6[b]
			(28.6, 38.1)	(30.4, 37.9)	(26.6, 33.4)	(29.6, 35.7)
40-49	22.1	18.6	29.3	31.0	33.0	33.8[b]
			(25.2, 33.5)	(27.7, 34.2)	(29.7, 36.2)	(30.7, 37.0)
50-59	24.4	20.4	23.8	33.7	33.8	32.5
			(20.3, 27.4)	(29.6, 37.8)[a]	(30.4, 37.3)	(29.0, 36.0)
60-74	30.0	23.7	23.6	30.3	29.2	24.0
			(20.0, 27.2)	(26.8, 33.9)	(26.3, 32.0)	(21.7, 26.4)[d]

Table 3.4: Crude prevalence (%) of leisure-time regular exercise among Singapore residents aged 18 to 74 years by age, gender, education, and ethnicity, 2007 to 2021 (continued)

	NHSS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2013	2017	2019	2020	2021
Males	25.4	28.1	30.2 (27.5, 32.9)	38.7 (36.1, 41.2)[a]	36.2 (34.0, 38.4)	37.5[b] (35.3, 39.6)
Females	22.8	19.0	29.0 (26.2, 31.8)	32.0 (29.4, 34.6)	30.7 (28.7, 32.8)	27.7 (25.8, 29.6)
Primary	19.7	13.4	17.4 (13.6, 21.2)	19.2 (16.3, 22.1)	18.5 (15.5, 21.5)	14.7 (11.7, 17.6)
Secondary	23.4	20.1	24.8 (21.5, 28.2)	28.5 (25.7, 31.3)	25.1 (22.7, 27.5)	22.6 (20.2, 25.0)[d]
Post-secondary	26.5	28.5	35.8 (32.9, 38.7)	41.9 (39.3, 44.4)[a]	40.0 (37.9, 42.1)	39.7[b] (37.7, 41.6)
Chinese	22.6	23.4	29.6 (27.1, 32.0)	34.7 (32.4, 37.1)[a]	33.6 (31.9, 35.3)	32.1[b] (30.5, 33.8)
Malays	22.2	20.1	27.7 (22.9, 32.6)	30.0 (26.7, 33.3)	23.9 (20.3, 27.5)	23.9 (20.0, 27.7)
Indians	37.0	26.7	29.8 (24.6, 34.9)	45.2 (40.0, 50.4)[a]	42.1 (36.6, 47.6)	42.7 (37.8, 47.6)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2010 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) Data for NPHS 2017 have been revised.

(5) [b] Indicate statistically significant linear upward trend between 2007 and 2021 with p-value <0.05.

(6) [d] Indicates that the results from NPHS 2019 and NPHS 2021 are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap.

Total Physical Activity

WHO guidelines recognises that participation in physical activity can be achieved across three domains: work-related activity (paid or unpaid work including household chores), transportation-related activity (e.g. walking or cycling while travelling to and from places) and leisure-time physical activity *(WHO 2020; WHO 2010)*.

Physical activity participation across the three domains (i.e. work-related, transport-related and leisure-time physical activity) was assessed and could be achieved in one single session or accumulated in bouts of at least 10 minutes throughout the day. WHO recommends that adults should do at least 150 minutes of moderate-intensity physical activity or at least 75 minutes of vigorous-intensity physical activity or an equivalent combination of moderate- and vigorous-intensity physical activity per week[6] (*WHO 2010*). This recommendation is equivalent to achieving a high to moderate level of total physical activity (i.e. having sufficient total physical activity). The criteria for the three levels of total physical activity classification are in Table 3.5.

Table 3.5: Classification of total physical activity[7]

Classification	Criteria
High	Vigorous-intensity activity on at least 3 days achieving a minimum of at least 1,500 MET*-minutes per week **OR** 7 or more days of any combination of walking, moderate- or vigorous- intensity activities achieving a minimum of at least 3,000 MET-minutes per week.
Moderate	Not meeting the criteria for the "high" category, but meeting any of the following criteria is classified in this category: 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- or vigorous-intensity activities achieving a minimum of at least 600 MET-minutes per week.
Low	Not meeting any of the above-mentioned criteria.

* MET (Metabolic Equivalents) is the ratio of a person's working metabolic rate relative to the resting metabolic rate. 1 MET is defined as the energy cost of sitting quietly and is equivalent to a caloric consumption of 1 kcal/kg/hour.

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[6] Another approach to meet the recommendation is to achieve 30 minutes of moderate-intensity activity on at least 5 days a week (*HSE 2016*).

[7] Based on WHO Global Physical Activity Questionnaire (GPAQ) Analysis Guide Version 2.0 which classified the intensity of total physical activity into 3 levels – high, moderate and low.

Total Physical Activity Level

The survey showed that the proportion of Singapore residents aged 18 to 74 years who engaged in high, moderate and low total physical activity were 29.2%, 42.0% and 28.9% respectively (Table 3.6).

Table 3.6: Total physical activity level (%) of Singapore residents aged 18 to 74 years by gender, 2021

Total Physical Activity Level	Total	Males	Females
High	29.2	32.9	25.5
Moderate	42.0	40.1	43.8
Low	28.9	27.0	30.7

Note: Data might not sum to 100% due to rounding.

Prevalence of Sufficient Total Physical Activity

In 2021, 71.1% of Singapore residents aged 18 to 74 years had sufficient (high and moderate) total physical activity (Table 3.7). More males (73.0%) compared with females (69.3%) were able to meet this recommended total physical activity level. Young adults in the 18 to 29 years age group (76.3%) had the highest level of sufficient total physical activity while the older adults aged 60 to 74 years had the lowest proportion at 65.1%. A higher proportion of Indians (80.2%) had sufficient total physical activity than the Malays (71.2%) and Chinese (69.7%) (Graph 3.2). Residents with post-secondary education (72.9%) had higher sufficient total physical activity compared with residents with secondary (69.8%) or primary (63.6%) education (Table 3.8). The largest contributor to total physical activity per week was commuting (47.0%), followed by leisure-time physical activity (27.5%) and work-related physical activity (25.5%).

Table 3.7: Age-specific crude prevalence (%) of sufficient total physical activity among Singapore residents aged 18 to 74 years by gender, 2021

Age (years)	Total	Males	Females
18-29	76.3	81.4	71.1
30-39	71.3	71.8	70.8
40-49	69.7	69.5	69.8
50-59	74.0	75.5	72.5
60-74	65.1	67.2	63.0
18-74	71.1	73.0	69.3

Note: Sufficient: High and moderate

Graph 3.2: Crude prevalence (%) of sufficient total physical activity among Singapore residents aged 18 to 74 years by gender and ethnicity, 2021
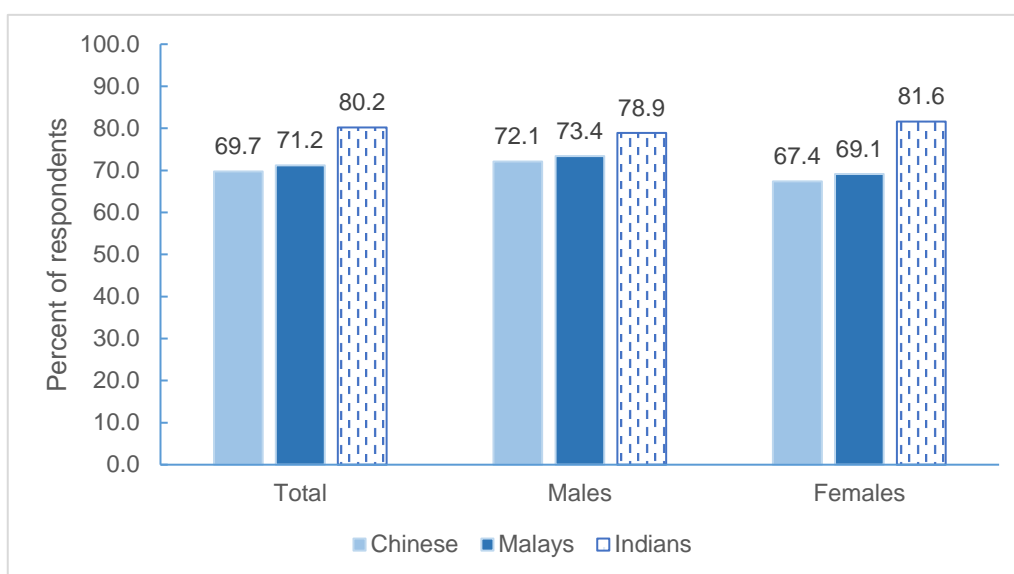
Note: Sufficient: High and moderate

Trends in Sufficient Total Physical Activity

Even though the downward trend in the proportion of residents with sufficient total physical activity at the overall level or by factors was not significant between 2007 and 2021 (Table 3.8), there was a steady significant decrease from 2019 to 2021 for the overall level and most subgroups except among Indians and residents aged 50 to 59 years old. The new working arrangement (where workdays were split between home and office) and the restrictions on recreational facilities (e.g., temporary closure of sports and recreational facilities, gardens, parks and nature reserves) in the last two years might have contributed to the reduction in participation in physical activity across all domains (i.e., work, commuting and leisure-time).

Table 3.8: Crude prevalence (%) of sufficient total physical activity among Singapore residents aged 18 to 74 years by age, gender, education, and ethnicity, 2007 to 2021

	NHSS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2013	2017	2019	2020	2021
Total	82.3	73.1	80.8 (78.6, 83.0)	80.1 (78.5, 81.7)	76.4 (75.1, 77.7)[a]	71.1 (69.8, 72.4)[ad]
ASR	82.4	73.3	80.8	80.4	76.8	71.7
18-29	84.0	79.5	85.6 (81.8, 89.3)	84.4 (81.3, 87.6)	82.9 (80.2, 85.6)	76.3 (73.0, 79.6)[ad]
30-39	79.5	73.0	80.5 (76.4, 84.7)	78.0 (74.9, 81.1)	76.9 (73.9, 79.8)	71.3 (68.4, 74.2)[d]
40-49	82.2	73.9	78.3 (74.6, 82.1)	79.8 (76.6, 83.0)	74.9 (72.0, 77.8)	69.7 (66.7, 72.7)[d]
50-59	83.6	71.9	80.5 (77.0, 84.0)	79.0 (75.7, 82.3)	76.0 (73.0, 79.0)	74.0 (71.1, 76.8)
60-74	82.3	65.1	78.6 (74.7, 82.6)	79.3 (76.5, 82.0)	71.9 (69.1, 74.7)[a]	65.1 (62.4, 67.7)[ad]
Males	81.7	74.8	81.4 (78.6, 84.2)	80.2 (78.1, 82.4)	76.4 (74.5, 78.3)	73.0 (71.2, 74.8)[d]
Females	82.9	71.5	80.2 (77.6, 82.9)	80.0 (78.1, 82.0)	76.5 (74.7, 78.2)	69.3 (67.4, 71.2)[ad]
Primary	86.1	67.6	82.2 (78.2, 86.2)	77.0 (73.0, 81.0)	72.4 (69.1, 75.7)	63.6 (59.8, 67.4)[ad]
Secondary	84.4	75.4	80.3 (77.0, 83.7)	80.9 (78.3, 83.6)	75.1 (72.6, 77.5)[a]	69.8 (67.3, 72.3)[ad]
Post-secondary	79.1	73.3	80.7 (78.1, 83.2)	80.5 (78.4, 82.6)	77.8 (76.1, 79.5)	72.9 (71.2, 74.6)[ad]
Chinese	81.1	72.0	80.4 (78.0, 82.8)	78.8 (77.0, 80.7)	75.4 (73.8, 76.9)[a]	69.7 (68.1, 71.2)[ad]
Malays	84.2	76.1	83.8 (79.6, 88.0)	82.0 (78.5, 85.6)	75.8 (72.1, 79.4)	71.2 (67.8, 74.7)[d]
Indians	88.0	76.3	79.5 (74.6, 84.5)	86.8 (82.8, 90.7)	84.4 (81.0, 87.7)	80.2 (76.6, 83.8)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2010 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) Data for NPHS 2017 have been revised.

(5) [d] Indicates that the results from NPHS 2019 and NPHS 2021 are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap.

Muscle-Strengthening Activities

WHO also recommends that adults should do muscle-strengthening activities involving the major muscle groups at least two days or more in a week. Muscle-strengthening activity refers to an activity or exercise that increases skeletal muscle strength, power, endurance and mass (e.g., strength training, resistance training or muscular strength and endurance exercises) and may involves the use of weight machines, exercise bands, hand-held weights or own body weight (e.g., push-ups or sit-ups) (*WHO 2010*; *Bennie et al. 2019)*. The major muscle groups to work on include the legs, back, abdomen, chest, shoulders and arms (*WHO 2010*). It has been shown that muscle-strengthening exercises increase skeletal muscle strength and mass, bone density, ability to perform activities of daily living, improve cardiometabolic heath and reduce symptoms of anxiety and depression (*Bennie et al. 2019*).

Method Used

Information on muscles-strengthening activities were collected since 2020 using an interviewer administered questionnaire. Respondents were asked about the number of days in a typical week that they do physical activities or exercises to strengthen their muscles. Respondents must complete at least one set of exercises involving eight to 12 repetitions to be counted as having done one day of muscle-strengthening activities. Respondents were classified as having sufficient muscle-strengthening activities if the frequency of muscle-strengthening activities are at least two days per week.

Prevalence of Sufficient Muscle-Strengthening Activities

More than one in three (35.5%) Singapore residents aged 18 to 74 years reported having sufficient muscle-strengthening activities in 2021 (Table 3.9). This was more common among younger adults aged 18 to 39 years (18 to 29 years: 46.4%; 30-39 years: 37.0%) while the proportion dropped to around one-third for those aged 40 to 74 years old. Males (40.0%) had higher proportion with sufficient muscle-strengthening activities compared with females (31.2%). The proportion of males in the ages 18 to 39 years with sufficient muscle-strengthening activities was almost 1.5 times that of females in the same age group.

Table 3.9: Age-specific crude prevalence (%) of sufficient muscle-strengthening activities among Singapore residents aged 18 to 74 years by gender, 2021

Age (years)	Total	Males	Females
18-29	46.4	56.3	36.5
30-39	37.0	43.7	30.9
40-49	30.8	32.5	29.3
50-59	32.3	34.6	30.0
60-74	31.3	33.3	29.4
18-74	35.5	40.0	31.2

Among the ethnic groups, Indians had the highest proportion with sufficient muscle-strengthening activities (41.7%) and for both gender (males 45.3%, females 37.8%) (Graph 3.3). About one-third of Chinese (34.5%) and Malays (33.7%) reported having sufficient muscle-strengthening activities. While Malay (39.9%) and Chinese (38.9%) males shared similar proportion with sufficient muscle-strengthening activities, Malay females had the lowest participation in sufficient muscle-strengthening activities (27.6%). Residents with post-secondary education (40.1%) had higher proportion with sufficient muscle-strengthening activities compared with residents with secondary (30.5%) or primary (21.0%) education (Table 3.10).

Graph 3.3: Crude prevalence (%) of sufficient muscle-strengthening activities among Singapore residents aged 18 to 74 years by gender and ethnicity, 2021
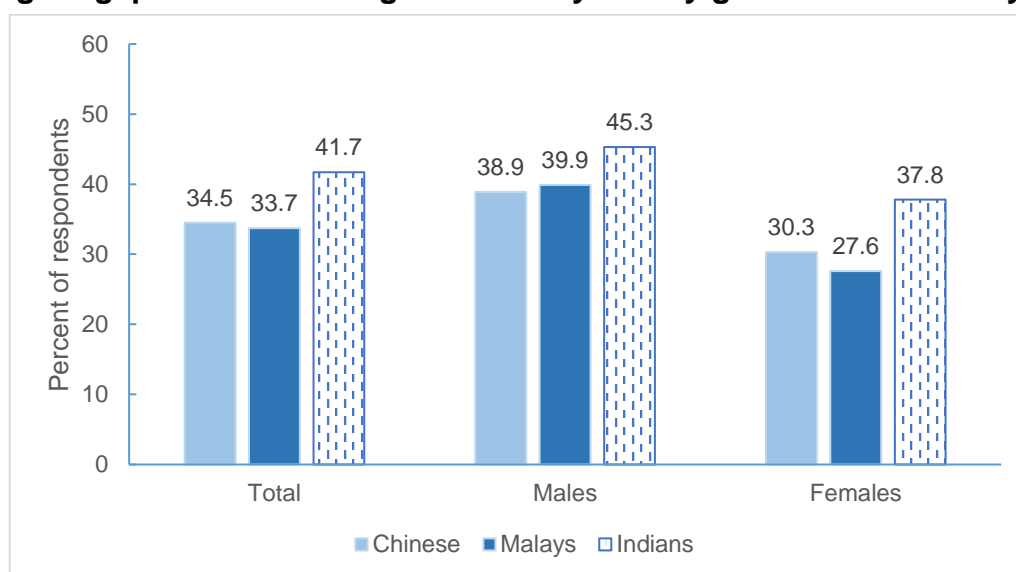
Trends in Sufficient Muscle-Strengthening Activities

The proportion of Singapore residents aged 18 to 74 years with sufficient muscle-strengthening activities has remained largely stable between 2020 and 2021 (Table 3.10). The only significant increase was observed for the 60 to 74 years age group, whereby the proportion increased from 25.5% in 2020 to 31.3% in 2021.

Table 3.10: Crude prevalence (%) of sufficient muscles-strengthening activities among Singapore residents aged 18 to 74 years by age, gender, education and ethnicity, 2020 to 2021

	NPHS	NPHS
	2020	2021
Total	33.8 (32.3, 35.3)	35.5 (34.0, 37.0)
ASR	34.5	36.0
18-29	44.1 (40.2, 48.0)	46.4 (42.4, 50.5)
30-39	30.9 (27.4, 34.4)	37.0 (33.8, 40.2)
40-49	33.5 (30.1, 36.8)	30.8 (27.8, 33.9)
50-59	35.5 (32.0, 39.0)	32.3 (29.0, 35.6)
60-74	25.5 (22.7, 28.3)	31.3 (28.8, 33.9)[a]
Males	40.1 (37.8, 42.4)	40.0 (37.9, 42.1)
Females	27.8 (25.8, 29.8)	31.2 (29.1, 33.2)
Primary	19.6 (16.4, 22.8)	21.0 (17.6, 24.3)
Secondary	27.4 (24.8, 30.0)	30.5 (28.0, 33.1)
Post-secondary	39.4 (37.3, 41.5)	40.1 (38.1, 42.0)
Chinese	32.7 (31.0, 34.5)	34.5 (32.8, 36.2)
Malays	32.7 (28.5, 36.9)	33.7 (29.8, 37.7)
Indians	41.6 (36.1, 47.1)	41.7 (36.8, 46.5)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically from the previous survey year at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2010 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

Chapter 4
Self-reported Diabetes Mellitus

Key Points

- About one in 15 (6.9%) Singapore residents aged 18 to 74 years reported that they had diabetes mellitus and were currently prescribed medication in 2021.

- Slightly more males (7.6%) reported having diabetes than females (6.2%).

- The prevalence of self-reported diabetes mellitus increased with age, from 0.9% in young adults aged 30 to 39 years to 18.3% among those aged 60 to 69 years and reached 21.7% among those aged 70 to 74 years.

Introduction

Diabetes mellitus represents a group of metabolic disorders characterised by high blood sugar (hyperglycemia) resulting from defects in insulin secretion, insulin action, or both. Diabetes mellitus can lead to death and disability through long-term complications such as blindness, kidney failure, coronary heart disease and stroke. Type 2 diabetes is the more common form of diabetes, occurring mainly in older adults and is associated with obesity (*Diabetes Mellitus MOH Clinical Practice Guidelines 2014).*

Method Used

An interviewer-administered questionnaire was used. In order to obtain an indication of the prevalence of known diabetes mellitus in the community, respondents were asked whether they had ever been told by a western-trained doctor that they had diabetes and were currently prescribed medication for diabetes. Respondents who answered "yes" to both questions were classified as having "reported diabetes mellitus". Diabetes mellitus prevalence estimates based on reported use of medication for diabetes mellitus are likely to under-estimate the true diabetes mellitus prevalence as a proportion of diabetics will be undiagnosed. Among those with diabetes, they were also asked on the frequency of doctor's visit and place of treatment to manage their diabetes.

Prevalence of Self-reported Diabetes Mellitus

The prevalence of self-reported diabetes among Singapore residents aged 18 to 74 years was 6.9% (Table 4.1). A higher proportion of males (7.6%) were reported as diabetic compared to females (6.2%) and this pattern was also observed in all age groups. Self-reported diabetes prevalence increased with age; from 0.9% among those aged 30 to 39 years to 18.3% of adults in the 60 to 69 years age group and 21.7% in those aged 70 to 74 years. Indians (13.5%) had the highest prevalence of self-reported diabetes among the ethnic groups (compared to 10.2% in Malays and 5.7% in Chinese) (Graph 4.1). The prevalence of self-reported diabetes showed an inverse relationship with education where higher educated residents had lower self-reported diabetes prevalence compared with lower educated residents (primary: 19.7%, secondary 10.6% and post-secondary 3.2%). Residents with self-reported diabetes visited a doctor for their diabetes management about four times in the past 12 months, mainly in polyclinics (61.9%), private GP clinics (19.8%) and specialist outpatient clinics in public hospitals (15.4%).

Table 4.1: Age-specific crude prevalence (%) of self-reported diabetes mellitus among Singapore residents aged 18 to 74 years by gender, 2021

Age (years)	Total	Males	Females
18-29	s	s	s
30-39	0.9	s	s
40-49	3.5	3.9	3.1
50-59	9.3	11.2	7.5
60-69	18.3	19.2	17.4
70-74	21.7	23.4	20.2
18-74	6.9	7.6	6.2

s: Data have been suppressed due to small counts or high sampling variability.

Trends in Prevalence of Self-reported Diabetes Mellitus

The crude prevalence of self-reported diabetes showed a significant increasing trend from 2007 (4.9%) to 2021 (6.9%) (Table 4.2). The increase was also seen in both males and females, among Chinese and Malays, and across all education levels. The overall age-standardised prevalence after accounting for the ageing population was lower than the crude prevalence and remained stable (i.e., no significant increasing trend) over the same period. Between 2019 and 2021, the prevalence of self-reported diabetes had remained stable across all subgroups.

Graph 4.1: Crude prevalence (%) of self-reported diabetes mellitus among Singapore residents aged 18 to 74 years by gender and ethnicity, 2021
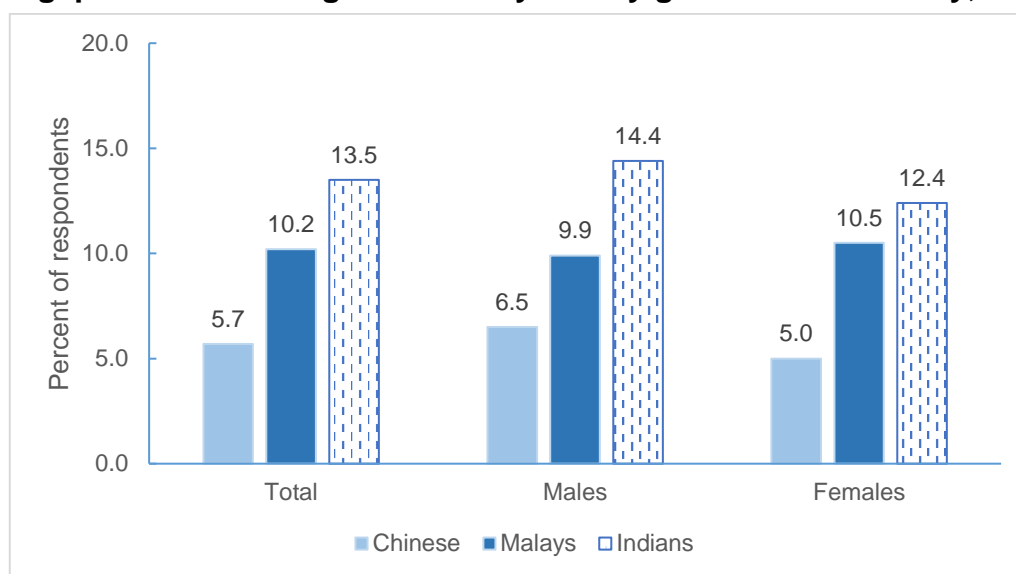
Table 4.2: Crude prevalence (%) of self-reported diabetes mellitus among Singapore residents aged 18 to 74 years by age, gender, education, and ethnicity, 2007 to 2021

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021
Total	4.9	5.0	5.4	6.7 (5.7, 7.7)	6.9 (6.1, 7.7)	7.0 (6.3, 7.8)	6.9[b] (6.2, 7.6)
ASR	5.2	5.0	5.2	5.8	5.7	5.7	5.4
18-29	s	s	s	s	s	s	s
30-39	0.7	s	s	s	s	1.7 (0.8, 2.6)	0.9 (0.4, 1.3)
40-49	4.3	2.6	4.2	4.3 (2.5, 6.2)	5.0 (3.0, 7.0)	4.3 (3.1, 5.6)	3.5 (2.4, 4.6)
50-59	8.2	10.0	8.1	11.7 (8.7, 14.6)	9.8 (7.7, 12.0)	7.9 (6.2, 9.6)	9.3 (7.6, 11.1)
60-69	17.1	14.0	14.8	17.3 (13.6, 21.0)	17.0 (14.1, 20.0)	19.0 (16.1, 22.0)	18.3 (15.7, 20.9)
70-74	15.7	16.8	22.2	14.8 (9.9, 19.7)	21.4 (16.7, 26.0)	21.0 (16.6, 25.5)	21.7 (17.5, 26.0)
Males	5.3	5.1	5.8	7.7 (6.1, 9.2)	8.3 (7.0, 9.5)	7.2 (6.0, 8.3)	7.6[b] (6.6, 8.7)
Females	4.5	4.9	5.1	5.7 (4.5, 7.0)	5.6 (4.5, 6.6)	6.9 (6.0, 7.9)	6.2[b] (5.3, 7.1)

Table 4.2: Crude prevalence (%) of self-reported diabetes mellitus among Singapore residents aged 18 to 74 years by age, gender, education, and ethnicity, 2007 to 2021 (continued)

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021
Primary	10.7	11.4	14.2	12.3 (9.4, 15.1)	19.5 (15.7, 23.3)[a]	18.9 (15.9, 22.0)	19.7[b] (16.8, 22.6)
Secondary	5.6	6.2	6.8	10.3 (8.1, 12.4)	10.0 (8.1, 11.8)	10.0 (8.4, 11.6)	10.6[b] (8.9, 12.3)
Post-secondary	2.0	1.9	2.0	3.0 (2.1, 4.0)	2.7 (2.1, 3.4)	3.4 (2.7, 4.2)	3.2[b] (2.6, 3.8)
Chinese	4.1	4.1	4.6	5.6 (4.5, 6.7)	6.2 (5.3, 7.1)	6.3 (5.4, 7.1)	5.7[b] (5.0, 6.5)
Malays	6.2	7.5	8.2	8.2 (5.3, 11.1)	8.8 (6.5, 11.1)	8.2 (6.1, 10.3)	10.2[b] (8.1, 12.4)
Indians	10.8	9.7	9.6	14.7 (10.1, 19.3)	11.5 (8.8, 14.3)	12.2 (9.2, 15.2)	13.5 (10.2, 16.8)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) s: Data have been suppressed due to small counts or high sampling variability.

(3) ASR: Age-standardised rate. The reference population used is Singapore Census 2010 resident population.

(4) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(5) [b] Indicate statistically significant linear upward trend between 2007 and 2021 with p-value <0.05.

Chapter 5
Self-reported Hypertension

Key Points

- About one in six (15.7%) Singapore residents aged 18 to 74 years reported that they had hypertension (or high blood pressure) and were currently prescribed medication in 2021.

- More males (17.2%) reported having hypertension than females (14.2%).

- The prevalence of self-reported hypertension increased with age, from 2.0% in young adults aged 30 to 39 years to 37.8% among those aged 60 to 69 years and reached 52.7% among those aged 70 to 74 years.

Introduction

Hypertension or high blood pressure is a chronic medical condition in which the arterial blood pressure is elevated. Persistent hypertension is one of the key risk factors for cardiovascular diseases such as heart attack, stroke and heart failure as well as other diseases like kidney failure. It is often known as a silent killer as it rarely causes symptoms, and many people go undiagnosed. Dietary and lifestyle changes can improve blood pressure control and decrease the risk of associated health complications, although drug treatment may be necessary in patients for whom lifestyle changes prove ineffective or insufficient *(WHO, 2013)*.

Method Used

An interviewer-administered questionnaire was used. In order to obtain an indication of the prevalence of known hypertension in the community, respondents were asked whether they had ever been told by a western-trained doctor that they had high blood pressure and were currently prescribed medication for high blood pressure. Respondents who answered "yes" to both questions were classified as having "reported hypertension". Hypertension prevalence estimates based on reported use of medication for high blood pressure are likely to under-estimate the true hypertension prevalence as a proportion of hypertensives will be undiagnosed. Among those with hypertension, they were also asked on the frequency of doctor's visit and place of treatment to manage their hypertension.

Prevalence of Self-reported Hypertension

The prevalence of self-reported hypertension among Singapore residents aged 18 to 74 years was 15.7% (Table 5.1). Overall, more males (17.2%) were reported as hypertensive compared to females (14.2%) and this trend was typically observed across all age groups. However, the reverse pattern was seen among the Malays where more females (16.9%) were reported as hypertensive compared to males (14.7%) (Graph 5.1). Self-reported hypertension prevalence was also found to increase with age, from 2.0% in young adults aged 30 to 39 years to 37.8% among those aged 60 to 69 years and reached 52.7% among those aged 70 to 74 years. The prevalence of self-reported hypertension appeared to be similar across the three ethnic groups, with the Malays (15.8%) and Chinese (15.7%) being only slightly higher than the Indians (15.3%). Similar to self-reported diabetes, residents with lower level of education had higher prevalence of self-reported hypertension (primary: 39.1%, secondary: 23.0% and post-secondary: 8.6%). Residents with self-reported hypertension visited a doctor for their high blood pressure management about four times in the past 12 months, mainly in polyclinics (53.5%), private GP clinics (32.6%) and specialist outpatient clinics in public hospitals (9.0%).

Table 5.1: Age-specific crude prevalence (%) of self-reported hypertension among Singapore residents aged 18 to 74 years by gender, 2021

Age (years)	Total	Males	Females
18-29	s	s	s
30-39	2.0	3.2	s
40-49	8.5	11.6	5.7
50-59	22.5	23.4	21.6
60-69	37.8	40.2	35.4
70-74	52.7	53.4	52.1
18-74	15.7	17.2	14.2

s: Data have been suppressed due to small counts or high sampling variability.

Trends in Prevalence of Self-reported Hypertension

The crude and age-standardised prevalence of self-reported hypertension did not show significant increasing trend between 2007 and 2021 (Table 5.2). On the other hand, the prevalence for males and across all education levels were trending upwards significantly over this period. The increase in overall prevalence was lower after age-standardisation, indicating that the increase was partly attributable to population ageing. Between 2019 and 2021, the prevalence of self-reported hypertension had remained stable across the demographic profiles.

Graph 5.1: Crude prevalence (%) of self-reported hypertension among Singapore residents aged 18 to 74 years by gender and ethnicity, 2021
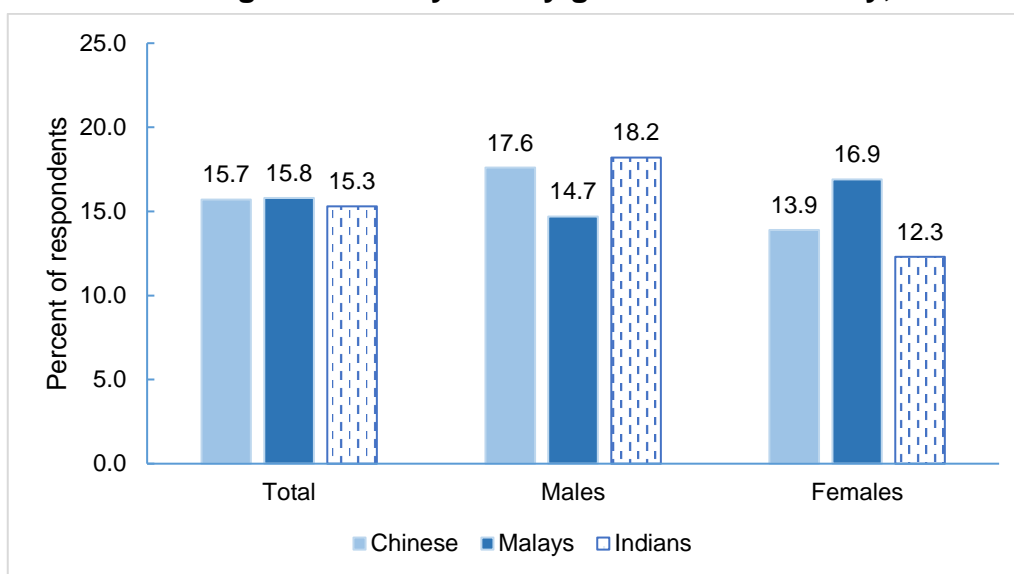
Table 5.2: Crude prevalence (%) of self-reported hypertension among Singapore residents aged 18 to 74 years by age, gender, education, and ethnicity, 2007 to 2021

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021
Total	12.7	14.0	12.9	12.7 (11.4, 14.1)	15.6 (14.3, 16.9)[a]	15.1 (14.1, 16.2)	15.7 (14.6, 16.7)
ASR	13.4	14.0	12.2	11.3	12.8	12.1	12.4
18-29	s	s	s	s	s	s	s
30-39	2.1	3.7	2.7	s	s	2.1 (1.2, 3.1)	2.0 (1.1, 2.9)
40-49	8.1	9.9	8.4	9.4 (6.7, 12.0)	9.0 (7.0, 11.0)	8.8 (7.0, 10.5)	8.5 (6.6, 10.5)
50-59	22.9	24.5	20.2	20.7 (17.1, 24.2)	22.8 (19.6, 25.9)	18.8 (16.1, 21.4)	22.5 (19.5, 25.4)
60-69	47.4	42.4	34.8	31.0 (26.2, 35.8)	37.2 (33.6, 40.8)	39.7 (36.1, 43.2)	37.8 (34.7, 40.9)
70-74	44.2	45.3	58.2	46.8 (39.0, 54.5)	55.8 (49.7, 61.9)	51.1 (45.3, 56.9)	52.7 (47.4, 58.0)
Males	12.9	14.8	13.5	13.8 (11.8, 15.7)	16.8 (14.9, 18.7)	15.9 (14.3, 17.5)	17.2[b] (15.7, 18.7)
Females	12.5	13.2	12.3	11.7 (10.1, 13.4)	14.5 (12.8, 16.1)	14.4 (13.0, 15.7)	14.2 (12.8, 15.7)

Table 5.2: Crude prevalence (%) of self-reported hypertension among Singapore residents aged 18 to 74 years by age, gender, education, and ethnicity, 2007 to 2021 (continued)

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021
Primary	26.3	30.1	29.9	25.9 (21.5, 30.3)	38.4 (34.2, 42.6) [a]	37.5 (33.8, 41.2)	39.1[b] (35.2, 43.0)
Secondary	13.9	15.6	15.8	16.6 (14.1, 19.2)	21.2 (18.9, 23.5)	20.2 (18.0, 22.3)	23.0[b] (20.6, 25.3)
Post-secondary	6.3	7.2	6.2	6.9 (5.4, 8.3)	8.1 (6.8, 9.4)	8.6 (7.4, 9.7)	8.6[b] (7.6, 9.7)
Chinese	13.3	14.4	13.4	13.0 (11.4, 14.6)	15.8 (14.3, 17.3)	15.9 (14.6, 17.1)	15.7 (14.5, 16.9)
Malays	12.4	14.3	11.5	10.5 (7.9, 13.1)	16.7 (13.5, 20.0) [a]	14.9 (12.1, 17.8)	15.8 (13.1, 18.5)
Indians	10.1	11.7	11.6	14.1 (9.9, 18.3)	12.6 (9.6, 15.7)	11.5 (8.7, 14.3)	15.3 (11.7, 19.0)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) s: Data have been suppressed due to small counts or high sampling variability.

(3) ASR: Age-standardised rate. The reference population used is Singapore Census 2010 resident population.

(4) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(5) [b] Indicate statistically significant linear upwards trend between 2007 and 2021 with p-value <0.05.

Chapter 6
Self-reported Hyperlipidaemia

Key Points

- About one in seven (13.9%) Singapore residents aged 18 to 74 years reported that they had hyperlipidaemia (or high blood cholesterol) and were currently prescribed medication in 2021.

- More males (15.2%) reported having high blood cholesterol than females (12.6%).

- The prevalence of self-reported high blood cholesterol increased with age, from 1.1% in young adults aged 30 to 39 years to 35.8% among those aged 60 to 69 years and reached 43.4% among those aged 70 to 74 years.

Introduction

Hyperlipidaemia or high blood cholesterol is a major risk factor for coronary heart disease. Elevated blood cholesterol, in particular LDL-cholesterol, causes atherosclerosis and increases the risk for coronary heart disease. HDL-cholesterol has been shown to have a protective effect against coronary heart disease. Low HDL-cholesterol has been shown to be an important independent risk factor for development of coronary heart disease. The adoption of healthier lifestyle behaviours such as reduced dietary intake of saturated fats and cholesterol, being more physically active, weight control, as well as clinical management of those persons at increased risk helps lower the cholesterol levels in the population (*JAMA 2001; NIH 2002).*

Method Used

An interviewer-administered questionnaire was used. In order to obtain an indication of the prevalence of known hyperlipidaemia in the community, respondents were asked whether they had ever been told by a western-trained doctor that they had high blood cholesterol and were currently prescribed medication for high blood cholesterol. Respondents who answered "yes" to both questions were classified as having "reported high blood cholesterol". High blood cholesterol prevalence estimates based on reported use of medication for high blood cholesterol are likely to under-estimate the true high blood cholesterol prevalence as a proportion of those with hyperlipidaemia will be undiagnosed. Among those with hyperlipidaemia, they were also asked on the frequency of doctor's visit and place of treatment to manage their high blood cholesterol.

Prevalence of Self-reported Hyperlipidaemia

The prevalence of self-reported high blood cholesterol among Singapore residents aged 18 to 74 years was 13.9% (Table 6.1). Overall, more males (15.2%) reported having hyperlipidaemia compared to females (12.6%) but more females in the older age group of 60 to 74 years reported having hyperlipidaemia compared to their male counterparts. Self-reported hyperlipidaemia prevalence was also found to increase with age, from 1.1% in young adults aged 30 to 39 years to 35.8% among those aged 60 to 69 years and reached 43.4% among those aged 70 to 74 years. Indians had the highest prevalence of self-reported hyperlipidaemia among the ethnic groups (15.8% compared to 14.0% in Chinese and 13.1% in Malays) (Graph 6.1). The prevalence of self-reported high blood cholesterol among lower educated residents was higher compared with higher educated residents (primary: 29.5%, secondary: 23.5% and post-secondary: 7.2%). Residents with self-reported hyperlipidaemia visited a doctor for their high blood cholesterol management about three times in the past 12 months, mainly in polyclinics (58.6%), private GP clinics (23.9%) and specialist outpatient clinics in public hospitals (13.7%).

Table 6.1: Age-specific crude prevalence (%) of self-reported hyperlipidaemia among Singapore residents aged 18 to 74 years by gender, 2021

Age (years)	Total	Males	Females
18-29	s	s	s
30-39	1.1	2.0	s
40-49	6.6	9.6	3.9
50-59	20.9	24.7	17.1
60-69	35.8	35.4	36.1
70-74	43.4	40.6	46.2
18-74	13.9	15.2	12.6

s: Data have been suppressed due to small counts or high sampling variability.

Trends in Prevalence of Self-reported Hyperlipidaemia

The crude prevalence of self-reported hyperlipidaemia increased significantly from 8.2% in 2007 to 13.9% in 2021 (Table 6.2). This significant increase was also seen among males, Chinese and those with primary or secondary education over the same period. After age-standardisation, the increase in overall prevalence was less pronounced indicating that the increase was partly attributable to population ageing. The slight increasing trend in the age-standardised prevalence of self-reported hyperlipidaemia was not significant between 2007 and 2021.

Between 2019 and 2021, the prevalence of hyperlipidaemia for residents with secondary education showed a significant increase from 18.5% (2019) to 23.5% (2021) while other subgroups did not display any significant changes.

Graph 6.1: Crude prevalence (%) of self-reported hyperlipidaemia among Singapore residents aged 18 to 74 years by gender and ethnicity, 2021
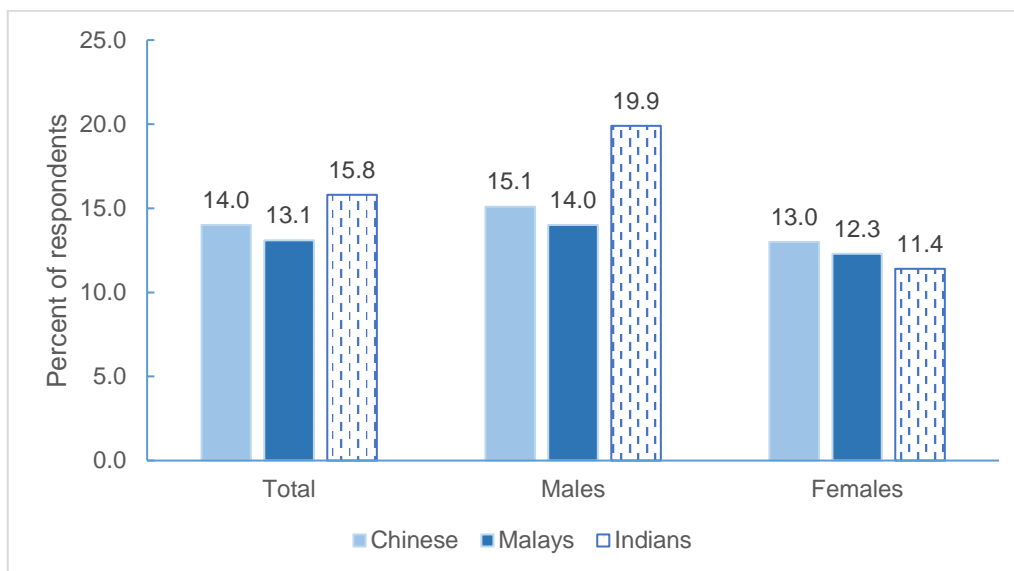
Table 6.2: Crude prevalence (%) of self-reported hyperlipidaemia among Singapore residents aged 18 to 74 years by age, gender, education, and ethnicity, 2007 to 2021

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021
Total	8.2	12.3	10.4	11.0 (9.7, 12.3)	13.6 (12.5, 14.6)[a]	13.1 (12.1, 14.1)	13.9[b] (12.9, 14.9)
ASR	8.7	12.3	9.9	9.6	11.1	10.6	10.8
18-29	s	s	s	s	s	s	s
30-39	2.1	2.4	1.3	1.7 (0.7, 2.7)	1.6 (0.7, 2.5)	s	1.1 (0.5, 1.8)
40-49	5.0	7.2	6.7	6.4 (4.3, 8.6)	7.6 (6.0, 9.1)	7.1 (5.5, 8.8)	6.6 (5.1, 8.2)
50-59	15.9	22.9	17.9	19.9 (16.2, 23.6)	22.1 (19.1, 25.1)	18.5 (15.7, 21.2)	20.9 (17.6, 24.1)
60-69	29.0	37.7	28.7	26.3 (22.0, 30.7)	33.5 (30.0, 36.9)	34.3 (30.8, 37.8)	35.8 (32.6, 38.9)
70-74	25.3	46.8	40.7	36.5 (29.4, 43.6)	42.4 (35.9, 48.8)	43.4 (37.7, 49.2)	43.4 (38.2, 48.7)

Table 6.2: Crude prevalence (%) of self-reported hyperlipidaemia among Singapore residents aged 18 to 74 years by age, gender, education, and ethnicity, 2007 and 2021 (continued)

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021
Males	8.6	12.4	10.7	12.4 (10.6, 14.2)	15.3 (13.6, 16.9)	13.9 (12.4, 15.5)	15.2[b] (13.7, 16.8)
Females	7.9	12.1	10.1	9.6 (8.2, 11.1)	12.0 (10.6, 13.3)	12.3 (11.0, 13.6)	12.6 (11.2, 14.0)
Primary	17.6	26.0	23.1	22.6 (18.7, 26.5)	34.8 (31.1, 38.5)[a]	33.2 (29.7, 36.8)	29.5[b] (26.3, 32.8)
Secondary	8.1	13.4	13.3	14.6 (12.0, 17.1)	18.5 (16.3, 20.6)	17.0 (14.9, 19.0)	23.5[b] (21.0, 25.9)[ad]
Post-secondary	4.6	6.7	4.8	5.8 (4.6, 7.0)	6.7 (5.7, 7.8)	7.7 (6.5, 8.8)	7.2 (6.2, 8.3)
Chinese	8.5	12.1	10.3	11.1 (9.7, 12.6)	13.9 (12.6, 15.1)	13.5 (12.3, 14.7)	14.0[b] (12.8, 15.2)
Malays	8.0	12.8	10.4	8.3 (5.2, 11.4)	13.4 (10.6, 16.2)	11.5 (9.0, 13.9)	13.1 (10.8, 15.5)
Indians	7.7	15.0	11.5	14.3 (9.8, 18.7)	12.5 (9.6, 15.4)	15.2 (11.8, 18.7)	15.8 (11.9, 19.6)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) s: Data have been suppressed due to small counts or high sampling variability.

(3) ASR: Age-standardised rate. The reference population used is Singapore Census 2010 resident population.

(4) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(5) [b] Indicate statistically significant linear upwards trend between 2007 and 2021 with p-value <0.05.

(6) [d] Indicates that the results from NPHS 2019 and NPHS 2021 are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap.

Chapter 7
Chronic Disease Screening

Key Points

- Among Singapore residents aged 40 to 74 years with no previous diagnosis of diabetes, high blood pressure, and high blood cholesterol ("DHL"), (i.e. not told by a doctor that they have these diseases), close to three-fifths (59.2%) were screened for all three health conditions within the recommended screening guidelines in 2021.

- Among Singapore residents aged 40 to 74 years without known diabetes, 76.6% had their blood glucose tested within the past three years.

- Among Singapore residents aged 40 to 74 years without known high blood pressure, 82.4% did their blood pressure check in the past two years.

- Among Singapore residents aged 40 to 74 years without known high blood cholesterol, 72.5% were screened within the past three years.

Introduction

Health screening is an effective strategy for disease prevention in the population. It is important to go for appropriate and regular health screening as it helps to detect risk factors or diseases early even when there are no symptoms. Early detection of diabetes mellitus, high blood pressure and high blood cholesterol could result in better treatment, fewer complications and increased chances of better outcomes *(HPB, 2019).*

Method Used

An interviewer-administered questionnaire was used. Respondents were asked whether they were ever told by a doctor that they had diabetes, high blood pressure or high blood cholesterol. Respondents who reported that they were not told by a doctor that they have diabetes or high blood cholesterol were asked on the last time they had a blood test to check for these health conditions. Those who were not told by a doctor to have high blood pressure were asked on the last time they had checked their blood pressure. Respondents were also asked where they last had their screening for these chronic diseases. Under the national "Screen for Life" (SFL) screening programme, Singapore residents aged 40 years and above are encouraged to go for diabetes and hyperlipidaemia screening once every three years and hypertension screening once every two years.

Practice of Health Screening

Health screening practice was relatively common among Singapore residents aged 40 to 74 years who were not told by a doctor to have any chronic diseases (diabetes, high blood pressure and high blood cholesterol (DHL)). 59.2% of them were screened for all three health conditions within the recommended screening guidelines in 2021 (Table 7.1). The majority of them with no known DHL were screened at the private GP clinics at 41.0%, followed by polyclinics (15.7%), specialist outpatient clinics in public hospitals (12.7%) and workplaces (10.9%).

Health screening practice was found to be more prevalent among older adults (aged 70 to 74), with close to three-quarters of them (72.6%) having screened for all three health conditions within the recommended screening guidelines. Among the ethnic groups, Indians (65.7%) had a higher screening prevalence for all three chronic diseases, followed by Chinese (59.7%) and Malays (48.3%). Singapore residents with higher education level were more likely to have gone for chronic disease screening compared to those with lower education level.

Looking at individual chronic disease alone regardless of the co-morbidity with other chronic diseases, 76.6% of adults aged 40 to 74 years without known diabetes were screened for diabetes within the past three years, 82.4% of those without known high blood pressure had their blood pressure checked within the past two years, and 72.5% of them with no previous diagnosis of high blood cholesterol were screened for this health condition within the past three years (Tables 7.3 to 7.5).

Of those Singapore residents aged 40 to 74 years without having any known diabetes, hypertension or hyperlipidaemia and had not gone for screening for the respective conditions, the following were cited as reasons for not doing screening:

Rank	Diabetes screening	High blood pressure screening	High blood cholesterol screening
1	Not necessary as I am healthy (66.9%)	Not necessary as I am healthy (74.7%)	Not necessary as I am healthy (68.1%)
2	No time due to work/ family commitment (8.3%)	No time due to work/ family commitment (8.4%)	No time due to work/ family commitment (9.8%)
3	Not suggested by doctors (7.6%)	s	Not suggested by doctors (6.5%)

Note: s: Data have been suppressed due to small counts or high sampling variability.

Trends in Health Screening

Looking at the trend data over the period from 2007 to 2021, significant increases in the screening participation for residents with no previous diagnosis of DHL were observed among those aged 40 to 49 years and those with post-secondary education (Table 7.2). The overall and age-standardised chronic disease screening participation did not show significant upward trend between 2007 and 2021.

For the individual chronic disease, the crude proportion of residents who had diabetes and hypertension screening increased significantly from 2007 to 2021 while the proportion for hyperlipidaemia did not show similar upward trend over the same period (Table 7.3 and 7.5). For diabetes, the screening participation also improved in the age groups of 40 to 49 years and 70 to 74 years; among males, Chinese and Indians, and those with post-secondary education. For hypertension, the significant improvements were observed for both males and females, among Chinese and those aged 40 to 49 years.

Comparing with pre-COVID (2019), the screening participation for residents with no previous diagnosis of DHL in 2021 (59.2%) was significantly lower compared with 2019 (66.3%). Significantly lower screening participation were found among female residents, Malays, residents aged 50 to 69 years and residents with secondary or post-secondary education in 2021 compared with 2019. Likewise for the individual chronic diseases, their screening participation in 2021 were also significantly lower compared with 2019. The lower screening participation could be due to deferment of non-urgent services such as health screening in healthcare institutions arising from the COVID-19 situation.

Table 7.1: Health screening practice (%) among Singapore residents who did not have any of the corresponding self-reported chronic diseases aged 40 to 74 years by socio-demographic characteristics, 2021

Characteristic	Screened for all 3 diseases within the recommended intervals	Diabetes screening at least once in the past 3 years	Hypertension screening at least once in the past 2 years	High blood cholesterol screening at least once in the past 3 years
Total	59.2	76.6	82.4	72.5
Age (years)				
40-49	60.8	74.2	81.9	71.6
50-59	55.3	73.8	79.7	68.7
60-69	58.6	79.2	85.3	74.4
70-74	72.6	90.0	89.7	88.2
Gender				
Males	61.3	78.6	81.8	74.2
Females	57.5	74.7	82.9	71.0
Highest Education Attained				
Primary	56.4	75.2	80.4	75.7
Secondary	50.1	72.7	81.7	64.0
Post-secondary	64.1	79.2	83.2	76.0
Ethnic group				
Chinese	59.7	76.6	81.6	72.9
Malays	48.3	69.1	83.8	62.2
Indians	65.7	85.1	87.2	79.8

Note: Analysis based on highest education attained served as a proxy to socio-economic factors.

Primary education: No formal qualification/ Primary/ PSLE.

Secondary education: Secondary/ GCE 'O'/ 'N' level.

Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

Table 7.2: Chronic disease screening participation (%) among Singapore residents who did not have any of the self-reported chronic diseases aged 40 to 74 years by age, gender, education, and ethnicity, 2007 to 2021

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021
Total	58.1	45.2	56.0	66.4 (63.1, 69.6)	66.3 (63.7, 68.9)	63.0 (60.4, 65.6)	59.2 (56.7, 61.8)[d]
ASR	60.3	45.2	56.3	67.0	66.9	63.1	58.6
40-49	54.5	44.7	55.0	60.7 (56.2, 65.1)	62.6 (58.6, 66.6)	62.5 (58.5, 66.6)	60.8[b] (56.8, 64.7)
50-59	60.4	47.9	54.8	69.1 (63.6, 74.5)	66.2 (61.5, 70.9)	63.1 (58.6, 67.6)	55.3 (50.5, 60.1)[d]
60-69	68.6	37.4	61.8	71.1 (64.6, 77.5)	72.1 (67.3, 77.0)	62.9 (57.2, 68.5)	58.6 (53.5, 63.6)[d]
70-74	68.9	53.3	56.9	85.2 (77.2, 93.2)	79.0 (71.6, 86.3)	66.7 (54.3, 79.0)	72.6 (64.8, 80.4)
Males	59.9	47.8	55.0	65.9 (61.3, 70.5)	67.5 (63.5, 71.5)	63.9 (60.2, 67.7)	61.3 (57.9, 64.6)
Females	56.4	42.8	56.9	66.8 (62.6, 71.0)	65.2 (61.7, 68.8)	62.2 (58.7, 65.8)	57.5 (53.7, 61.3)[d]
Primary	57.8	32.7	43.7	60.9 (53.3, 68.6)	57.2 (50.7, 63.8)	50.4 (44.3, 56.6)	56.4 (49.9, 62.9)
Secondary	57.6	45.4	53.7	64.4 (59.0, 69.7)	61.1 (56.7, 65.6)	55.9 (51.2, 60.7)	50.1 (45.2, 54.9)[d]
Post-secondary	59.0	54.1	64.5	71.0 (66.7, 75.4)	71.4 (67.8, 75.1)	69.8 (66.3, 73.3)	64.1[b] (60.8, 67.4)[d]
Chinese	57.2	44.6	55.7	65.8 (62.1, 69.5)	64.9 (61.8, 67.9)	63.5 (60.6, 66.5)	59.7 (56.7, 62.7)
Malays	57.2	40.0	48.2	62.2 (53.4, 71.1)	64.4 (56.4, 72.3)	48.4 (39.7, 57.0)	48.3 (40.5, 56.0)[d]
Indians	70.1	59.3	68.9	80.0 (71.9, 88.1)	78.7 (71.7, 85.7)	75.4 (68.3, 82.5)	65.7 (58.7, 72.7)

Table 7.3: Diabetes screening participation (%) among Singapore residents who did not have self-reported diabetes aged 40 to 74 years by age, gender, education, and ethnicity, 2007 to 2021

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021
Total	72.4	63.9	70.3	77.8 (75.6, 80.0)	81.0 (79.3, 82.8)	78.5 (76.8, 80.3)	76.6[b] (74.9, 78.2)[d]
ASR	73.2	63.9	70.2	77.6	80.3	78.1	75.6
40-49	67.3	58.3	65.9	71.4 (67.7, 75.1)	75.4 (72.0, 78.8)	75.2 (72.0, 78.5)	74.2[b] (71.4, 77.0)
50-59	74.8	64.4	68.9	80.0 (76.2, 83.7)	81.4 (78.3, 84.5)	79.0 (75.9, 82.1)	73.8 (70.5, 77.1)[d]
60-69	80.0	73.9	78.1	81.7 (77.3, 86.2)	85.7 (83.1, 88.3)	79.8 (76.4, 83.2)	79.2 (76.3, 82.1)[d]
70-74	79.9	71.8	84.2	92.1 (87.7, 96.6)	91.2 (87.9, 94.5)	87.8 (83.1, 92.6)	90.0[b] (87.1, 93.0)
Males	73.1	64.7	70.2	78.9 (75.8, 82.0)	82.6 (80.2, 84.9)	80.8 (78.4, 83.1)	78.6[b] (76.5, 80.7)
Females	71.8	63.0	70.5	76.9 (73.8, 80.0)	79.7 (77.1, 82.3)	76.4 (73.8, 79.1)	74.7 (72.2, 77.1)
Primary	70.7	58.4	63.9	75.4 (70.6, 80.3)	77.8 (74.4, 81.2)	73.8 (69.8, 77.8)	75.2 (71.3, 79.0)
Secondary	72.2	61.7	69.0	75.8 (72.0, 79.6)	79.7 (77.1, 82.3)	74.6 (71.2, 78.0)	72.7 (69.5, 75.9)[d]
Post-secondary	74.4	71.0	76.0	81.3 (78.1, 84.5)	83.0 (80.4, 85.7)	82.2 (79.8, 84.7)	79.2[b] (77.1, 81.3)
Chinese	72.7	64.4	70.0	76.9 (74.4, 79.5)	80.5 (78.5, 82.5)	78.9 (76.9, 80.8)	76.6[b] (74.7, 78.5)
Malays	68.4	54.5	65.7	76.5 (69.6, 83.3)	77.7 (71.9, 83.4)	69.8 (63.2, 76.4)	69.1 (63.8, 74.3)
Indians	79.2	74.2	79.9	88.1 (82.3, 94.0)	89.3 (84.8, 93.8)	88.0 (83.0, 93.0)	85.1[b] (81.0, 89.2)

Table 7.4: Hypertension screening participation (%) among Singapore residents who did not have self-reported hypertension aged 40 to 74 years by age, gender, education, and ethnicity, 2007 to 2021

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021
Total	77.7	79.9	77.8	82.9 (80.8, 85.0)	86.0 (84.4, 87.6)	83.3 (81.4, 85.1)	82.4[b] (80.7, 84.1)[d]
ASR	78.6	79.9	78.0	82.9	86.2	83.3	81.8
40-49	75.8	78.3	76.4	79.9 (76.1, 83.6)	84.6 (81.6, 87.6)	82.7 (79.6, 85.8)	81.9[b] (79.2, 84.6)
50-59	77.5	82.9	76.2	81.6 (78.1, 85.2)	85.7 (82.9, 88.5)	83.0 (79.8, 86.1)	79.7 (76.3, 83.1)
60-69	85.0	78.5	84.4	88.3 (84.6, 92.1)	88.1 (85.2, 91.1)	84.8 (81.4, 88.3)	85.3 (82.5, 88.2)
70-74	82.2	79.5	79.3	94.1 (89.9, 98.3)	90.8 (86.3, 95.2)	83.6 (75.0, 92.1)	89.7 (85.6, 93.8)
Males	77.1	80.5	77.0	81.3 (77.8, 84.8)	85.5 (83.1, 88.0)	83.2 (80.6, 85.8)	81.8[b] (79.4, 84.2)
Females	78.2	79.4	78.5	84.4 (81.7, 87.0)	86.5 (84.3, 88.6)	83.4 (80.8, 86.0)	82.9[b] (80.5, 85.3)
Primary	76.5	72.9	68.7	80.1 (75.0, 85.2)	78.4 (74.2, 82.6)	78.4 (74.2, 82.6)	80.4 (76.3, 84.6)
Secondary	79.9	80.5	76.7	82.3 (78.7, 86.0)	85.4 (82.9, 87.8)	79.2 (75.6, 82.8)[a]	81.7 (78.4, 85.1)
Post-secondary	75.6	84.6	84.2	85.2 (82.1, 88.4)	88.7 (86.5, 91.0)	86.8 (84.3, 89.2)	83.2 (81.0, 85.3)[d]
Chinese	76.7	79.9	76.9	82.2 (79.8, 84.6)	85.8 (84.0, 87.7)	83.1 (81.0, 85.2)	81.6[b] (79.6, 83.6)[d]
Malays	79.3	76.6	76.4	82.6 (76.3, 88.8)	81.4 (76.0, 86.8)	74.7 (67.3, 82.0)	83.8 (79.5, 88.0)
Indians	87.6	86.7	86.7	92.8 (88.4, 97.3)	92.5 (88.5, 96.5)	92.4 (89.0, 95.9)	87.2 (82.9, 91.5)

Table 7.5: Hyperlipidaemia screening participation (%) among Singapore residents who did not have self-reported hyperlipidaemia aged 40 to 74 years by age, gender, education, and ethnicity, 2007 to 2021

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021
Total	78.1	61.1	73.0	78.2 (75.9, 80.5)	77.9 (76.0, 79.9)	76.5 (74.5, 78.6)	72.5 (70.5, 74.5)[d]
ASR	78.9	61.1	73.2	78.2	77.5	76.3	71.8
40-49	74.8	59.3	70.8	73.0 (69.2, 76.7)	73.3 (69.7, 76.8)	74.5 (71.1, 78.0)	71.6 (68.3, 74.8)
50-59	79.9	62.9	70.7	78.7 (74.6, 82.9)	76.9 (73.3, 80.5)	75.3 (71.7, 79.0)	68.7 (64.7, 72.7)[d]
60-69	86.2	63.1	79.4	84.1 (80.0, 88.2)	84.0 (80.9, 87.1)	79.0 (75.2, 82.8)	74.4 (70.6, 78.1)[d]
70-74	77.9	61.5	84.8	90.3 (85.0, 95.7)	89.8 (85.2, 94.4)	85.7 (79.3, 92.1)	88.2 (84.2, 92.2)
Males	77.9	62.8	71.8	78.6 (75.2, 82.0)	79.0 (76.0, 82.0)	77.5 (74.7, 80.3)	74.2 (71.7, 76.7)
Females	78.3	59.5	74.1	77.8 (74.8, 80.9)	77.0 (74.5, 79.6)	75.7 (72.8, 78.6)	71.0 (67.9, 74.0)[d]
Primary	73.8	53.7	66.2	74.9 (69.4, 80.4)	74.2 (69.4, 79.0)	68.1 (63.1, 73.1)	75.7 (71.4, 80.0)
Secondary	77.7	61.1	72.1	76.4 (72.2, 80.6)	75.1 (71.9, 78.4)	72.3 (68.5, 76.1)	64.0 (60.0, 68.1)[ad]
Post-secondary	82.4	67.1	78.3	81.7 (78.5, 84.9)	80.9 (77.9, 83.9)	81.3 (78.7, 84.0)	76.0 (73.5, 78.5)[a]
Chinese	78.1	61.8	72.5	77.7 (75.1, 80.3)	77.9 (75.6, 80.2)	77.3 (75.1, 79.5)	72.9 (70.6, 75.2)[d]
Malays	74.0	53.8	69.6	77.7 (70.8, 84.6)	75.1 (68.9, 81.4)	63.0 (55.5, 70.6)	62.2 (55.3, 69.0)
Indians	83.1	67.6	82.2	86.3 (80.7, 91.9)	83.6 (77.7, 89.4)	84.8 (79.4, 90.2)	79.8 (74.9, 84.7)

<u>Notes applicable to Table 7.2 to 7.5</u>:

(1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) ASR: Age- standardised rate. The reference population used is Singapore Census 2010 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [b] Indicate statistically significant linear upward trend between 2007 and 2021 with p-value <0.05.

(5) [d] Indicates that the results from NPHS 2019 and NPHS 2021 are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap.

Chapter 8
Breast Cancer Screening

Key Points

- In 2021, close to one-third (31.1%) of Singapore women in the 50 to 69 years age group reported that they had gone for mammography in the last two years.

Introduction

Breast cancer remained the most common cancer among Singapore women in the past 50 years *(NRDO 2020)*. For the five-year period from 2016-2020, the age-standardised incidence rate of breast cancer was 73.8 per 100,000 women. It was the leading cause of cancer death among females in 2016-2020, accounting for 17.2% of cancer deaths among females.

Breast cancer has been linked to a number of risk factors including age, family history of breast cancer, smoking, high-fat diet and obesity. The earlier breast cancer is diagnosed, the better the chances for successful treatment. As early breast cancer usually does not present with any symptoms, screening is therefore important. Mammography for women over 50 years old is widely accepted as appropriate and beneficial. The Ministry of Health's Clinical Practice Guidelines on Cancer Screening (2010) and the national "Screen for Life" (SFL) screening programme recommended women aged 50 to 69 years to go for mammography once every two years.

Method Used

An interviewer-administered questionnaire was used. Female respondents were asked on their practice of mammography as well as where they took their mammography.

Practice of Mammography

Close to one-third (31.1%) of Singapore women in the 50 to 69 years age group reported that they had gone for a mammography within the last two years, in accordance with the recommended frequency of mammography in this age group (Table 8.1). A higher proportion of Indian (37.7%) and Chinese (31.7%) women had undergone mammography compared to their Malay counterparts (18.7%) (Table 8.2). Ever-married women (32.0%) were more likely to have a mammography within the last two years than never married women (24.2%) (Table 8.1). Women with post-secondary education (42.4%) were more likely to be screened than women with secondary education (26.0%) or primary education (24.6%) (Table 8.2). Close to one in two (47.1%) women had their mammogram taken in the polyclinics, followed by public hospitals (23.6%), private hospitals (12.3%) and private X-ray centres (11.9%).

Table 8.1: Practice of mammography (%) among Singapore female residents aged 50 to 69 years by marital status, 2021

Characteristic	Had a mammography within the last 2 years
Total	31.1
Marital status	
Never married	24.2
Ever-married	32.0

Trends in Breast Cancer Screening

Between 2007 and 2021, the decrease in screening participation for breast cancer was only significant for females with secondary education while the downward trends for overall and other groups were not significant (Table 8.2).

On the other hand, the overall breast screening participation dropped to 31.1% in 2021, significantly lower than 38.7% in 2019, probably due to the impact of COVID-19 situation (e.g., with the deferment of non-urgent services such as health screening). Similar decreases in screening participation were also observed in the residents with secondary education and among Chinese between 2019 and 2021.

Table 8.2: Breast cancer screening participation (%) among Singapore female residents aged 50 to 69 years by age, education, and ethnicity, 2007 to 2021

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021
Total	41.0	39.6	42.7	30.9 (26.9, 34.9)	38.7 (34.8, 42.6)	37.9 (34.7, 41.2)	31.1 (28.0, 34.1)[ad]
ASR	41.2	39.6	42.4	31.1	39.9	38.5	32.0
50-59	43.6	40.5	44.3	32.7 (27.3, 38.2)	40.2 (34.7, 45.7)	40.9 (36.1, 45.8)	31.6 (27.3, 36.0)[a]
60-69	35.8	37.9	39.9	28.4 (23.0, 33.9)	36.9 (31.4, 42.4)	34.3 (29.7, 38.8)	30.4 (26.1, 34.8)
Primary	29.9	29.3	25.5	24.3 (17.4, 31.2)	28.4 (22.2, 34.6)	22.6 (17.3, 27.8)	24.6 (18.3, 31.0)
Secondary	48.4	40.8	46.2	28.6 (22.8, 34.4)	37.0 (32.3, 41.7)	32.9 (28.0, 37.9)	26.0[c] (21.6, 30.4)[d]
Post-secondary	54.8	60.7	66.0	45.6 (35.7, 55.5)	49.6 (41.2, 58.0)	54.3 (48.0, 60.6)	42.4 (37.0, 47.9)[a]
Chinese	41.9	41.7	44.4	32.2 (27.6, 36.8)	40.1 (35.7, 44.6)	41.3 (37.6, 45.0)	31.7 (28.2, 35.2)[ad]
Malays	35.0	23.5	28.1	10.4 (4.3, 16.5)	28.9 (20.5, 37.3) [a]	17.6 (10.7, 24.4)	18.7 (11.7, 25.8)
Indians	38.2	41.9	44.8	46.3 (30.2, 62.3)	41.0 (28.5, 53.5)	43.2 (31.3, 55.1)	37.7 (27.0, 48.4)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2010 female resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [c] Indicate statistically significant linear downward trend between 2007 and 2021 with p-value <0.05.

(5) [d] Indicates that the results from NPHS 2019 and NPHS 2021 are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap.

Chapter 9

Cervical Cancer Screening

Key Points

- In 2021, about two in five (41.0%) women reported that they had gone for a cervical cancer screening (had done a Pap smear test in the past three years or a HPV test in the past five years).

- Women aged 30 to 59 years were most likely to have undergone cervical cancer screening.

Introduction

Cervical cancer is the 10th most common cancer among women in Singapore for the five-year period from 2016-2020 *(NRDO 2020).* During this period, the age-standardised incidence rate of cervical cancer was 6.7 per 100,000 women and it accounted for 2.6% of all cancer deaths among females.

Major risk factors for cervical cancer include having sexual intercourse at an early age, having multiple sexual partners and infection with Human Papillomavirus (HPV) (the cause of genital warts). Long term consumption of combined oral contraceptive pills and cigarette smoking are also risk factors. If cervical cancer is detected before it becomes invasive, it is almost certainly curable. Screening for cervical cancer with the Papanicolaou (Pap) smear test is inexpensive and is widely accepted as being effective and beneficial.

Based on the latest recommendations on cervical cancer screening in 2019[8], women aged 25 to 29 years are recommended to undergo a Pap smear test at a three yearly interval while women aged 30 years and above are recommended to take a HPV test at a five-yearly interval.

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[8] Based on Ministry of Health Circular No. 08/2019 dated 6 March 2019 on "Release of New Screening Test Review Committee Guidelines, Including Changes to Diabetes Mellitus, Lipid Disorders, And Cervical Cancer Screening".

Method Used

An interviewer-administered questionnaire was used. Female respondents were asked on their practice of cervical cancer screening as well as where they took the test; and which test (Pap smear test/ HPV test) was taken.

Practice of Cervical Cancer Screening

Among women aged 25 to 74 years, about two in five (41.0%) had undergone cervical cancer screening (had done a Pap smear test in the past three years or a HPV test in the past five years) (Table 9.1). Indians (44.4%) and Chinese (42.2%) women were more likely to have undergone cervical cancer screening compared to Malays (29.2%) women (Table 9.2). Women aged 30 to 59 years were the most likely to have undergone cervical cancer screening. The proportion of women who had undergone cervical cancer screening was higher among ever-married women (48.9%) than those who were never married (15.9%) (Table 9.1). Women with post-secondary education (45.9%) were more likely to have done a Pap smear test in the past three years or a HPV test in the past five years compared to those with secondary (35.2%) or primary education (29.4%). The majority of the women had their last cervical cancer screening in private GP clinics (25.7%), specialist outpatient clinics in the public hospitals (23.1%) or specialist outpatient clinics in the private hospitals (18.9%). Another 18.4% of women had their last cervical cancer screening in the polyclinics.

Table 9.1: Practice of cervical cancer screening (%) among Singapore women aged 25 to 74 years by marital status, 2021

Characteristic	Had a cervical cancer screening
Total	41.0
Marital status	
Never married	15.9
Ever-married	48.9

Trends in Cervical Cancer Screening

The crude screening participation for cervical cancer decreased significantly from 57.9% in 2007 to 41.1% in 2021 (Table 9.2). The significant decrease was also seen in the younger age groups (25 to 29 years and 30 to 39 years), across all education levels and among Chinese and Malays.

Between 2019 and 2021, the screening participation for overall level and some subgroups (i.e., females aged 30 to 39 years and 50 to 59 years old, Chinese and those with secondary or post-secondary education) in 2021 were significantly lower compared with 2019 which might be due to the deferment of non-urgent services such as health screening due to COVID-19 situation.

Table 9.2: Cervical cancer screening participation (%) among Singapore female residents aged 25 to 74 years by age, education, and ethnicity, 2007 to 2021

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021
Total	57.9	46.8	48.9	46.3 (43.5, 49.1)	48.2 (45.8, 50.7)	45.4 (43.1, 47.6)	41.0[c] (38.7, 43.3)[d]
ASR	57.5	46.8	48.5	47.0	49.6	46.3	42.7
25-29	49.5	32.3	29.4	21.5 (14.2, 28.9)	21.0 (15.1, 26.9)	18.8 (12.8, 24.7)	21.4[c] (15.2, 27.5)
30-39	69.5	59.5	53.9	57.5 (51.5, 63.4)	55.9 (51.0, 60.7)	52.2 (47.6, 56.9)	43.6[c] (39.1, 48.2)[d]
40-49	64.6	57.1	54.6	56.8 (51.1, 62.6)	58.8 (54.1, 63.5)	57.6 (52.8, 62.4)	56.1 (50.8, 61.5)
50-59	59.8	43.8	48.4	48.8 (42.6, 54.9)	56.5 (51.5, 61.5)	52.8 (47.7, 57.9)	44.9 (40.0, 49.8)[d]
60-69	33.3	29.0	44.2	33.9 (28.2, 39.5)	37.0 (31.2, 42.8)	33.9 (29.2, 38.6)	32.5 (27.9, 37.0)
70-74	s	s	47.5	18.0 (10.0, 26.1)	25.1 (17.8, 32.4)	20.6 (14.0, 27.3)	20.9 (12.8, 29.1)
Primary	38.2	31.2	36.3	27.9 (22.5, 33.2)	28.9 (23.7, 34.1)	28.3 (23.4, 33.2)	29.4[c] (23.5, 35.4)
Secondary	62.5	51.0	50.7	42.4 (37.3, 47.5)	49.8 (45.8, 53.9)	40.5 (36.3, 44.6)[a]	35.2[c] (31.2, 39.2)[d]
Post-secondary	66.4	52.5	53.4	55.5 (51.3, 59.8)	52.8 (49.3, 56.4)	51.7 (48.6, 54.8)	45.9[c] (42.8, 49.0)[d]

Table 9.2: Cervical cancer screening participation (%) among Singapore female residents aged 25 to 74 years by age, education, and ethnicity, 2007 to 2021 (continued)

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021
Chinese	59.4	47.6	50.8	48.5 (45.3, 51.7)	49.9 (46.8, 52.9)	47.2 (44.6, 49.8)	42.2c (39.5, 44.9)d
Malays	48.9	38.5	38.6	29.1 (22.2, 36.0)	34.8 (28.8, 40.8)	29.8 (23.5, 36.0)	29.2c (23.0, 35.5)
Indians	51.8	47.0	42.8	47.4 (39.6, 55.2)	46.1 (39.4, 52.8)	46.3 (38.8, 53.7)	44.4 (38.1, 50.8)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) s: Data have been suppressed due to small counts or high sampling variability.

(3) ASR: Age-standardised rate. The reference population used is Singapore Census 2010 female resident population.

(4) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(5) [c] Indicate statistically significant linear downward trend between 2007 and 2021 with p-value <0.05.

(6) [d] Indicates that the results from NPHS 2019 and NPHS 2021 are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap.

Chapter 10
Colorectal Cancer Screening

Key Points

- Overall in 2021, 36.6% of Singapore residents aged 50 to 74 years had undergone colorectal screening within the recommended screening frequency.

- Close to one in five (19.0%) of these residents reported having undergone Faecal Occult Blood Test (FOBT) at least once in the past one year while about one in four (26.0%) had undergone colonoscopy in the past 10 years.

- The practice of taking a FOBT or a colonoscopy was more prevalent among males (39.1%) than females (34.2%).

Introduction

Colorectal cancer was the most common and second most common cancer among Singapore men and women respectively for the five-year period from 2016-2020 (*NRDO 2020)*. During this period, the age-standardised incidence rate of colorectal cancer was 38.0 per 100,000 men and 27.0 per 100,000 women respectively and there was a total of 4,295 deaths (more than two deaths per day on average).

Factors that have been associated with higher risk of colorectal cancer include specific hereditary conditions, older age, inflammatory bowel diseases, regular high saturated fat, low fiber diet, excessive alcohol intake and sedentary lifestyle.

Faecal Occult Blood Test (FOBT) and colonoscopy are able to detect colorectal cancer at an early stage. The Ministry of Health's Clinical Practice Guidelines on Cancer Screening (2010) recommends annual screening for colorectal cancer using FOBT for people aged 50 years and older who are at average risk for colorectal cancer. For a person who is tested positive for FOBT, colonoscopy is the confirmatory diagnostic investigations.

Method Used

An interviewer administered questionnaire was used. Respondents were asked whether they had ever done FOBT or colonoscopy, and how long ago it had been since their last test.

Practice of FOBT

Based on the survey, 19.0% of Singapore residents aged 50 to 74 years reported to have a FOBT done in the last one year (Table 10.1). A higher proportion of males (21.8%) had undergone FOBT compared to females (16.3%). Chinese (20.0%) and Indians (17.0%) were more likely to have undergone the test compared to Malays (12.4%). Higher proportion of residents with post-secondary (24.9%) had done a FOBT in the last one year compared to residents with secondary (17.2%) or primary (12.9%) education.

Practice of Colonoscopy

26.0% of Singapore residents aged 50 to 74 years reported to have undergone a colonoscopy in the last 10 years (Table 10.1). Similar to the practice of FOBT, the practice of colonoscopy was more prevalent among males (28.5%) than females (23.6%). Chinese (27.7%) and Indians (18.4%) were more likely to have undergone a colonoscopy compared to Malays (16.3%). By education attainment, more than one-third (34.7%) of residents with post-secondary had a colonoscopy in the last 10 years compared to residents with secondary (23.8%) or primary (16.0%) education.

Overall, 36.6% of Singapore residents aged 50 to 74 years had undergone colorectal screening within the recommended screening frequency. In general, Singapore residents with higher education levels were more likely to report to have had a FOBT within the last one year or a colonoscopy within the last 10 years. Almost one in two (46.7%) residents with post-secondary education had done the screening compared to about one in three (34.9%) with secondary education and almost one in four (24.0%) with primary education.

Table 10.1: Practice of FOBT or colonoscopy (%) among Singapore residents aged 50 to 74 years by socio-demographic characteristics, 2021

Characteristic	Had a FOBT in last 1 year	Had a colonoscopy in last 10 years	Had a FOBT in last 1 year or a colonoscopy in last 10 years
Total	19.0	26.0	36.6
Age (years)			
50-59	16.9	23.4	33.9
60-69	21.2	27.6	38.8
70-74	19.9	30.1	39.5
Gender			
Males	21.8	28.5	39.1
Females	16.3	23.6	34.2
Highest education attained			
Primary	12.9	16.0	24.0
Secondary	17.2	23.8	34.9
Post-secondary	24.9	34.7	46.7
Ethnic group			
Chinese	20.0	27.7	38.6
Malays	12.4	16.3	25.5
Indians	17.0	18.4	29.6

Note: Analysis based on highest education attained served as a proxy to socio-economic factors.

Primary education: No formal qualification/ Primary/ PSLE.

Secondary education: Secondary/ GCE 'O'/ 'N' level.

Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

Trends in Colorectal Cancer Screening

The crude and age-standardised screening rate for colorectal cancer rose significantly from 2007 to 2021 (Table 10.2). The increase was seen across all age, gender, education and ethnic groups over this period.

However, the overall screening participation in 2021 (36.6%) was significantly lower than 2019 (42.0%) and likewise for residents with primary education (31.9% in 2019, 24.0% in 2021). These decreases might be contributed by the deferment of non-urgent services such as health screening due to the COVID-19 situation.

Table 10.2: Colorectal cancer screening participation (%) among Singapore residents aged 50 to 74 years by age, gender, education, and ethnicity, 2007 to 2021

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021
Total	14.6	19.4	21.2	33.5 (30.5, 36.6)	42.0 (39.1, 44.8)[a]	41.1 (38.9, 43.3)	36.6[b] (34.4, 38.8)[ad]
ASR	14.6	19.4	21.2	33.4	41.5	40.6	35.9[b]
50-59	13.7	18.6	19.1	32.5 (28.6, 36.4)	39.7 (35.9, 43.5)	39.8 (36.4, 43.2)	33.9[b] (30.3, 37.4)
60-69	16.6	21.3	21.9	35.4 (30.7, 40.2)	44.3 (39.8, 48.7)	43.6 (40.0, 47.2)	38.8[b] (35.7, 41.9)
70-74	13.8	18.5	30.4	31.5 (24.7, 38.4)	43.7 (37.0, 50.3)	38.3 (32.7, 43.9)	39.5[b] (34.2, 44.7)
Males	17.2	21.7	22.2	36.2 (31.7, 40.7)	45.4 (41.5, 49.2)[a]	44.6 (41.2, 47.9)	39.1[b] (36.0, 42.2)
Females	12.1	17.2	20.3	30.9 (27.1, 34.8)	38.7 (35.5, 41.9)[a]	37.7 (34.6, 40.8)	34.2[b] (31.1, 37.3)
Primary	11.4	12.3	14.7	25.9 (21.4, 30.3)	31.9 (28.1, 35.7)	27.9 (24.2, 31.6)	24.0[b] (20.5, 27.4)[d]
Secondary	16.5	19.0	21.6	33.2 (28.5, 37.8)	38.9 (34.9, 42.9)	35.8 (32.3, 39.2)	34.9[b] (31.3, 38.5)
Post-secondary	16.8	32.5	29.5	44.0 (37.8, 50.3)	53.5 (48.4, 58.6)	54.9 (50.8, 59.0)	46.7[b] (42.9, 50.4)[a]
Chinese	15.2	21.3	22.3	34.6 (31.1, 38.0)	43.6 (40.4, 46.8)[a]	44.7 (42.2, 47.3)	38.6[b] (36.1, 41.1)[a]
Malays	10.0	6.9	12.4	20.4 (13.3, 27.5)	31.9 (24.7, 39.2)	17.5 (12.8, 22.1)[a]	25.5[b] (19.3, 31.8)
Indians	14.8	18.7	22.1	36.9 (26.8, 47.0)	37.5 (29.3, 45.7)	40.3 (32.4, 48.1)	29.6[b] (23.2, 36.0)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2010 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) Data for NPHS 2017 have been revised due to a coding error.

(5) [b] Indicate statistically significant linear upward trend between 2007 and 2021 with p-value <0.05.

(6) [d] Indicates that the results from NPHS 2019 and NPHS 2021 are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap.

Chapter 11

Vaccination

Key Points

- In 2021, almost one in five (18.7%) Singapore residents aged 18 to 74 years reported that they had a flu injection in the past 12 months.

- The self-reported influenza vaccination among females (19.1%) was higher than males (18.4%).

- Malays (20.1%) and Indians (19.4%) had higher self-reported influenza vaccination than Chinese (18.5%).

- The proportion of elderly aged 65 to 74 years who reported ever having received pneumococcal vaccine was 22.4% in 2021.

Introduction

Influenza, which is commonly called flu, is a respiratory illness which is highly contagious. For healthy individuals, influenza is usually self-limiting. However, it can sometimes lead to complications and even death. Those who are at risk of serious flu complications like older people, young children and people with certain chronic conditions should get vaccinated [9]. Annual influenza vaccination is part of the nationally recommended vaccinations for these groups of people[10].

Pneumococcal vaccine helps to prevent pneumococcal disease caused by the bacteria *Streptococcus pneumonia*. It can cause a wide spectrum of illness and disease burden is greater at the extremes of ages, that is, those less than five years old and those older than 65 years old. These include infection of the lungs (pneumonia), ear (otitis media), brain (meningitis), blood (bacteremia) and other serious infections[11]. The National Adult Immunisation Schedule (2017) recommends all persons aged 65 years or older to be vaccinated against pneumococcal disease[9].

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[9] Healthhub. "Influenza". https://www.healthhub.sg/a-z/diseases-and-conditions/103/topics_influenza (accessed on 21 March 2022).

[10] Ministry of Health. "Nationally Recommended Vaccines". https://www.moh.gov.sg/resources-statistics/nationally-recommended-vaccines (accessed on 21 March 2022).

[11] Healthhub. "Pneumococcal Disease". https://www.healthhub.sg/a-z/diseases-and-conditions/121/topic_pneumococcal_disease (accessed on 21 March 2022).

Method Used

An interviewer-administered questionnaire was used to measure the uptake of both vaccinations. Respondents were asked "In the past 12 months, have you had an injection to protect you from getting flu?" and "Have you ever had pneumococcal vaccination?"

Self-reported Influenza Vaccination

Adults aged 18 to 29 years and 65 to 74 years had the highest self-reported influenza vaccination compared to other age groups (Table 11.1). About one-third (32.4%) of adults aged 65 to 74 years and one-fifth (21.3%) aged 18 to 29 years reported that they had a flu injection in the past 12 months. Malays (20.1%) and Indians (19.4%) had higher self-reported influenza vaccination than Chinese (18.5%) (Graph 11.1). Self-reported influenza vaccination among females was highest in Indians (20.9%), followed by Chinese (19.0%) and Malays (18.3%), whilst the vaccination among males was highest in Malays (22.0%), followed by Indians (18.0%) and Chinese (17.9%).

Table 11.1: Age-specific (%) of self-reported influenza vaccination among Singapore residents aged 18 to 74 years by gender, 2021

Age (years)	Total	Males	Females
18-29	21.3	22.8	19.8
30-39	16.9	16.6	17.1
40-49	14.0	12.8	15.1
50-64	14.7	13.5	16.0
65-74	32.4	32.8	32.1
18-74	18.7	18.4	19.1

Graph 11.1: Self-reported Influenza vaccination (%) among Singapore residents aged 18 to 74 years by gender and ethnicity, 2021
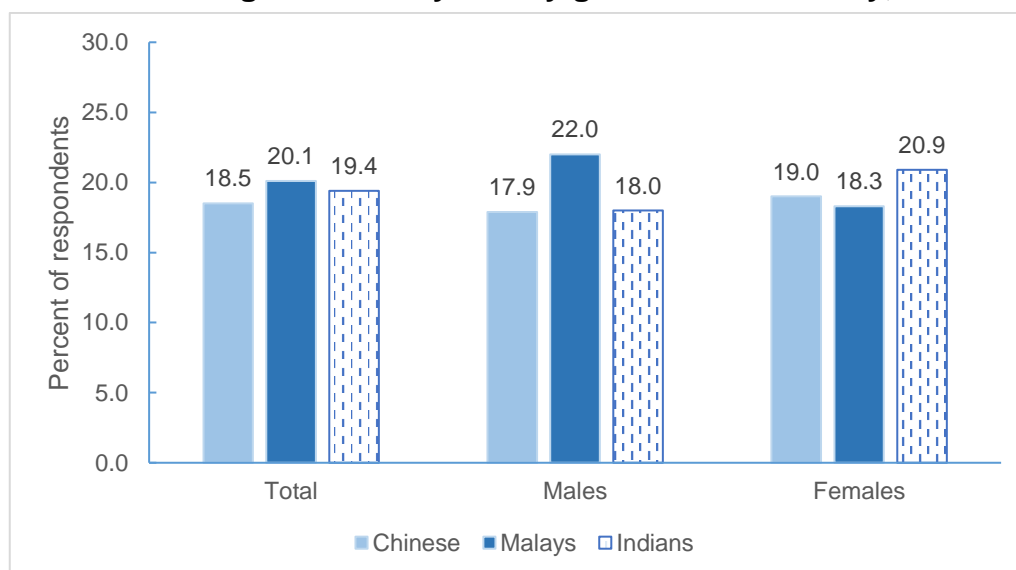
Trends in Self-reported Influenza Vaccination

Among Singapore residents aged 18 to 74 years, the overall self-reported influenza vaccination did not show a significant increasing trend between 2017 and 2021 (Table 11.2). On the other hand, there were noteworthy improvements in the vaccination for males, Chinese and adults in the 40 to 49 years age group over this period.

Arising possibly from greater awareness about the importance of vaccination due to COVID-19, the proportion of older residents aged 65 to 74 who reported having influenza vaccination rose significantly in 2021 (32.4%) compared with 2019 (24.2%).

Self-reported Pneumococcal Vaccination among Elderly

The upward trend in the self-reported pneumococcal vaccination among Singapore residents aged 65 to 74 years was not significant from 2017 to 2021 (Table 11.3).

However, the increase was significant when comparing 2019 (10.3%) with 2021 (22.4%). Likewise, similar significant improvements were observed for most demographic characteristics except among the post-secondary educated residents, which had consistently higher vaccination compared to other education groups over the years.

Table 11.2: Self-reported influenza vaccination (%) among Singapore residents aged 18 to 74 years by age, gender, education, and ethnicity, 2017 to 2021

	NPHS 2017	NPHS 2019	NPHS 2020	NPHS 2021
Total	13.1 (11.7, 14.5)	17.4 (16.0,18.7)[a]	17.0 (15.8,18.2)	18.7 (17.6, 19.9)
ASR	13.0	17.0	16.6	17.7
18-29	17.8 (13.8, 21.8)	21.2 (17.7, 24.7)	19.8 (16.5, 23.0)	21.3 (17.8, 24.8)
30-39	14.2 (11.0, 17.3)	16.0 (13.2, 18.8)	17.4 (14.4, 20.4)	16.9 (14.6, 19.1)
40-49	9.6 (7.0, 12.2)	12.1 (9.9, 14.3)	12.6 (10.3, 14.9)	14.0[b] (12.0, 16.0)
50-64	11.3 (9.0, 13.6)	16.2 (13.7, 18.6)[a]	15.4 (13.3, 17.6)	14.7 (12.8, 16.6)
65-74	13.5 (9.8, 17.3)	24.2 (20.2, 28.2)[a]	22.5 (19.4, 25.5)	32.4 (29.0, 35.8)[ad]
Males	14.2 (12.1, 16.4)	16.0 (14.3, 17.7)	18.0 (16.0, 19.9)	18.4[b] (16.7, 20.0)
Females	12.0 (10.2, 13.8)	18.7 (16.6, 20.7)[a]	16.1 (14.6, 17.6)	19.1 (17.5, 20.7)
Primary	8.4 (6.1, 10.8)	16.4 (12.9, 19.9)[a]	15.3 (12.6, 18.1)	18.3 (15.1, 21.5)
Secondary	11.6 (9.2, 14.0)	15.3 (13.3, 17.3)	14.1 (12.3, 16.0)	18.9 (16.8, 21.0)[a]
Post-secondary	15.1 (13.2, 17.1)	18.5 (16.7, 20.3)	18.7 (16.9, 20.4)	18.8 (17.2, 20.3)
Chinese	12.0 (10.4, 13.6)	16.7 (15.0, 18.3)[a]	17.2 (15.8, 18.6)	18.5[b] (17.1, 19.8)
Malays	18.2 (13.8, 22.6)	19.9 (16.4, 23.4)	15.8 (12.9, 18.7)	20.1 (17.0, 23.3)
Indians	14.5 (10.6, 18.4)	19.8 (15.4, 24.3)	17.4 (12.3, 22.6)	19.4 (14.8, 24.0)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2010 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [b] Indicate statistically significant linear upward trend between 2017 and 2021 with p-value <0.05.

(5) [d] Indicates that the results from NPHS 2019 and NPHS 2021 are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap.

Table 11.3: Self-reported pneumococcal vaccination (%) among Singapore residents aged 65 to 74 years by gender, education, and ethnicity, 2017 to 2021

	NPHS 2017	NPHS 2019	NPHS 2020	NPHS 2021
Total	11.9 (7.4, 16.4)	10.3 (7.9, 12.7)	14.4 (11.8, 17.0)	22.4 (19.3, 25.5)[ad]
Males	s	10.4 (7.2, 13.7)	13.8 (10.0, 17.7)	21.9 (17.9, 25.9)[ad]
Females	12.7 (8.0, 17.3)	10.2 (6.8, 13.6)	15.0 (11.5, 18.4)	22.8 (18.1, 27.5)[d]
Primary	9.6 (4.2, 15.0)	6.5 (4.2, 8.9)	14.4 (10.5,18.2)[a]	20.5 (14.4, 26.7)[d]
Secondary	13.3 (6.8, 19.9)	11.4 (7.2, 15.6)	13.8 (9.9,17.6)	22.2 (18.0, 26.5)[ad]
Post-secondary	s	16.2 (8.9, 23.5)	15.7 (9.1, 22.2)	25.5 (19.1, 32.0)
Chinese	9.8 (6.0, 13.6)	9.9 (7.4, 12.3)	15.1 (12.2, 18.0)	21.6 (18.2, 25.0)[ad]
Malays	s	s	s	23.3 (13.8, 32.8)
Indians	s	s	s	32.2 (17.5, 47.0)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) s: Data have been suppressed due to small counts or high sampling variability.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [d] Indicates that the results from NPHS 2019 and NPHS 2021 are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap.

Chapter 12
Mental Health

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Key Points

- In 2021, Singapore residents aged 18 to 74 years were more willing to seek help informally from their social circle (69.1%) than formally from healthcare professionals (58.3%) if they were constantly unable to cope with stress.

- Females were more willing to seek help from healthcare professionals and informal support networks compared to males.

- Among the age groups, Singapore residents aged 60 to 74 years (45.8%) were the least willing to seek help from healthcare professionals while those aged 30 to 39 years (67.7%) were the most willing to seek help from healthcare professionals.

- Similarly, the willingness to seek help from informal support networks decreased with age, it was the highest among younger adults aged 18 to 29 years (84.3%) and the lowest among older adults aged 60 to 74 years (50.3%).

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Introduction

The WHO defines mental health as more than the absence of mental disorders but it is also a state of well-being in which the individual realises his or her own abilities, is able to cope with the normal stresses of life, work productively and fruitfully, and contribute to his or her community. A person's mental health may be affected by multiple interrelated social, psychological and biological factors (*WHO 2007*).

Definition of Help-seeking Attitudes

Respondents were asked on their willingness to seek help if they were constantly unable to cope with stress in the interviewer-administered questionnaire. Singapore residents who are constantly unable to cope with stress can seek help from healthcare professionals or informal support networks. Healthcare professionals include counsellors, doctors, psychologists or psychiatrists. Informal support networks refer to friends, relatives, colleagues, religious leaders and teachers in school.

Help-seeking Attitudes

In 2021, Singapore residents aged 18 to 74 years were more willing to seek help from informal support networks (69.1%) than from healthcare professionals (58.3%) if they were constantly unable to cope with stress (Table 12.1 and 12.2). Females were more willing to seek help from healthcare professionals and informal support networks compared to males. Older adults aged 60 to 74 years (45.8%) were the least willing to seek help from healthcare professionals while those aged 30 to 39 years (67.7%) were the most willing to seek help from healthcare professionals. Similarly, the willingness to seek help from informal support decreased with age, it was highest among younger adults aged 18 to 29 years (84.3%) and the lowest among older adults aged 60 to 74 years (50.3%). Those of higher levels of educational attainment were more willing to seek help from healthcare professionals and informal support networks, it was highest among those with post-secondary education and the lowest among those with primary education.

Trends in Help-seeking Attitudes

The proportion of residents who were willing to seek help from healthcare professionals for most demographic profiles increased significantly between 2019 and 2021 except for a few subgroups (i.e., the 18 to 29 years old and 60 to 74 years old, residents with primary and secondary education; and among Malays) (Table 12.1).

On the other hand, the overall proportion of residents who were willing to seek help from informal support networks dropped significantly from 74.5% in 2019 to 69.1% in 2021. Such significant decreases in the proportions between 2019 and 2021 were also observed for residents aged 50 to 74 years, residents with secondary education, among Chinese and for both genders. For other subgroups, the proportions who were willing to seek non-professional help remained comparable between these two years.

Table 12.1: Proportion of Singapore residents aged 18 to 74 years who were willing to seek help from healthcare professionals by age, gender, education, and ethnicity, 2019 to 2021

	NPHS	NPHS	NPHS
	2019	2020	2021
Total	47.8 (46.0, 49.6)	60.4 (58.9, 61.8)[a]	58.3 (56.8, 59.8)[d]
ASR	48.7	61.7	59.7
18-29	54.6 (50.3, 58.8)	63.3 (59.6, 67.0)[a]	62.2 (58.4, 66.0)
30-39	53.5 (49.6, 57.4)	69.4 (66.3, 72.5)[a]	67.7 (64.8, 70.6)[d]
40-49	47.0 (43.2, 50.8)	63.8 (60.6, 67.0)[a]	65.4 (62.2, 68.5)[d]
50-59	42.9 (38.9, 46.8)	58.9 (55.5, 62.2)[a]	51.9 (48.5, 55.4)[ad]
60-74	41.2 (37.6, 44.8)	47.8 (44.7, 50.9)	45.8 (43.1, 48.5)
Males	45.4 (43.1, 47.7)	59.0 (56.8, 61.2)[a]	56.8 (54.7, 58.8)[d]
Females	50.1 (47.7, 52.4)	61.6 (59.6, 63.7)[a]	59.8 (57.7, 61.9)[d]
Primary	29.6 (25.8, 33.5)	34.1 (30.5, 37.8)	34.9 (31.0, 38.7)
Secondary	44.0 (41.3, 46.6)	52.5 (49.7, 55.3)[a]	45.8 (43.0, 48.6)[a]
Post-secondary	53.5 (51.1, 55.8)	68.9 (67.0, 70.8)[a]	67.6 (65.8, 69.3)[d]
Chinese	48.2 (46.2, 50.2)	61.5 (59.8, 63.2)[a]	58.6 (56.9, 60.3)[d]
Malays	48.5 (44.6, 52.4)	54.0 (49.6, 58.3)	55.2 (51.2, 59.3)
Indians	44.4 (39.2, 49.7)	59.3 (54.2, 64.3)[a]	57.1 (52.3, 61.9)[d]

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2010 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [d] Indicates that the results from NPHS 2019 and NPHS 2021 are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap.

Table 12.2: Proportion of Singapore residents aged 18 to 74 years who were willing to seek help from informal support networks by age, gender, education, and ethnicity, 2019 to 2021

	NPHS	NPHS	NPHS
	2019	2020	2021
Total	74.5 (73.0, 76.0)	79.2 (78.0, 80.4)[a]	69.1 (67.7, 70.6)[ad]
ASR	76.3	80.9	71.5
18-29	86.0 (83.1, 88.9)	88.1 (85.9, 90.4)	84.3 (81.2, 87.4)
30-39	82.8 (80.3, 85.4)	86.3 (84.0, 88.6)	78.6 (75.8, 81.4)[a]
40-49	76.1 (72.9, 79.3)	81.7 (79.3, 84.1)	73.7 (70.0, 77.4)[a]
50-59	69.0 (65.2, 72.8)	78.4 (75.7, 81.0)[a]	61.0 (57.6, 64.4)[ad]
60-74	59.3 (55.9, 62.6)	63.1 (60.2, 66.1)	50.3 (47.6, 53.0)[ad]
Males	69.3 (67.1, 71.5)	75.1 (73.3, 77.0)[a]	64.3 (62.3, 66.3)[ad]
Females	79.5 (77.7, 81.4)	83.1 (81.6, 84.6)[a]	73.7 (71.6, 75.8)[ad]
Primary	56.4 (52.2, 60.7)	61.2 (57.6, 64.9)	49.8 (45.9, 53.7)[a]
Secondary	73.1 (70.6, 75.6)	74.3 (72.0, 76.7)	60.3 (57.5, 63.1)[ad]
Post-secondary	79.1 (77.1, 81.2)	84.8 (83.4, 86.2)[a]	76.2 (74.3, 78.0)[a]
Chinese	74.4 (72.7, 76.1)	79.9 (78.5, 81.2)[a]	67.9 (66.2, 69.6)[ad]
Malays	78.3 (74.8, 81.8)	79.2 (75.9, 82.5)	72.2 (68.4, 76.0)
Indians	68.8 (63.5, 74.0)	74.0 (69.7, 78.2)	72.9 (68.9, 77.0)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (i.e., between NPHS 2017 and NPHS 2019, NPHS 2019 and NPHS 2020, NPHS 2020 and NPHS 2021).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2010 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
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Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [d] Indicates that the results from NPHS 2019 and NPHS 2021 are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap.

Chapter 13 Survey Methodology

Study Design and Objectives

The NPHS is a cross-sectional population health survey series jointly managed by the Ministry of Health and Health Promotion Board to track the health and risk factors of the Singapore residents. The main objectives of the survey are to monitor the health of Singapore residents and track progress towards national targets in the areas of:

    (i)   risk factors such as alcohol consumption, cigarette smoking and physical inactivity;

    (ii)   diseases such as diabetes mellitus, hypertension and hyperlipidaemia; and

    (iii)   preventive health behaviours such as chronic disease screening; cervical, breast and colorectal cancer screening; and vaccinations.

The survey results were presented for the 18 to 74 years age group for most chapters except chronic disease screening, cancer screening and vaccinations. For these few chapters, the analyses were confined to relevant age groups recommended for screening and immunisation. Data for the "Others" ethnic group were included in the compilation of the survey results shown under "Total", but suppressed in ethnic-specific data of all statistical tables due to small counts or high sampling variability.

Ethics Approval

The NPHS methodology, protocol and procedures were approved by National Healthcare Group (NHG) Domain Specific Review Board (Domain F).

Sample Design

A representative sample of residential addresses was obtained from the Singapore Department of Statistics (DOS) who maintains a sampling frame of residential addresses for the selection of samples for household surveys. The sample selection was based on a two-stage design where the primary sampling units comprised of geographical areas and the secondary sampling units were the residential dwelling units.

The NPHS design comprised two components – (1) Household Interview (HI) and (2) Health Examination (HE). In the first component, a household member aged 18 to 79 years old (also known as "reference person") was identified using KISH tables within each selected address to participate in the household based face-to-face questionnaire interview (i.e. NPHS HI). Only Singapore citizens and permanent residents were recruited for the survey. All reference persons who completed NPHS HI would be invited to undergo a health examination (i.e. NPHS HE) at a designated clinic or screening sites. Physical measurements e.g. height, weight, hip and waist circumference, blood pressure levels and bio-specimens such as blood and urine samples of survey respondents were collected. The blood and urine samples were sent to a medical laboratory to test for blood sugar, cholesterol, proteins in urine and other conditions. A full report on the respondent's health status was mailed to him/ her six to eight weeks after the completion of the health examination.

Questionnaire

An electronic structured questionnaire administrated on a tablet was used in the survey to collect information on the demographic, socio-economic, lifestyle practices relating to the major non-communicable diseases and risk factors, health conditions, knowledge, attitude and practices on health screening as well as the help-seeking attitudes of the respondents. The questionnaire was adopted from that of the National Population Health Survey 2017 and National Health Surveillance Survey 2013; and included elements of the instruments used in the WHO STEP-wise approach to Surveillance of Non-Communicable Diseases (STEPS) Instrument for Non-Communicable Disease Risk Factors and WHO's Global Physical Activity Questionnaire (GPAQ).

Invitation Letter and Publicity

An invitation letter, in four official languages, was mailed to the selected household addresses one week prior to visitation by the assigned interviewers. The invitation letter provided information on the survey purpose, what the survey comprised and expected survey duration. It also informed that an interviewer from a research company commissioned by the Ministry of Health and Health Promotion Board would be visiting the household to enumerate, select and interview an eligible household member to take part in the survey, and assured the household on the confidentiality of all collected information. A dedicated NPHS webpage was set-up to provide detailed information on the conduct of the NPHS.

Training

All survey interviewers were given an overview of the survey background and briefed extensively on the fieldwork procedures such as procurement of appointments, enumeration of household members, selection of eligible household members using KISH tables and consent taking for survey participation. They were given training slides on survey protocols and questionnaire administration as well as training in administrating the electronic questionnaire on a tablet. Fieldworkers carrying out the health examination were given training on consent taking and the standard operation procedures for the conduct of health examination. These trainings helped to ensure compliance to standards and protocols of the survey, and consistency in data collection for the household interview and health examination.

Household Interview Fieldwork

The survey fieldwork was conducted between 17 July 2020 and 30 June 2021. Survey interviewers from the appointed research company *(National University of Singapore (IPS-Social Lab))* commissioned by the Ministry of Health and Health Promotion Board visited all the selected household addresses. The interviewers made a minimum of five visit attempts, at different times of the day and on different days of a week to establish contact with the reference person or household member to conduct the survey or obtain a survey appointment if the reference person is unavailable at the point of visit. Informed written consent was obtained from the reference person before the interviewer administered the questionnaire face-to-face. A token of appreciation was given to the reference person who completed the survey interview. All reference persons who completed the household interview were invited to go for a health examination and given a letter of invitation by the interviewer. Safe management measures (SMMs) based on the prevailing measures set by Multi-Ministry Taskforce (MTF) were implemented during the conduct of survey to ensure the safety and wellbeing of the respondents and interviewers.

Health Examination Fieldwork

The health examination fieldwork was carried out by two healthcare service providers appointed by the Ministry of Health and Health Promotion Board. The health examinations conducted between 22 July 2020 and 10 October 2020 were provided by *ST Healthcare Pte Ltd* at the appointed clinic in Singapore Aeromedical Centre (SAC) or roving screening site in Health Promotion Board (HPB) on selected Saturdays. A new healthcare service provider (*Healthway Medical Group*) was appointed in October 2020 for the provision of services for health examination at five appointed clinics located in Kwong Wai Shiu Hospital, Tampines Central, Toa Payoh Central, Yishun and Jurong West. Health examinations at these five locations were carried from 28 November 2020 to 31 August 2021. Safe management measures based on the prevailing measures set by Multi-Ministry Taskforce were implemented during the conduct of health examination throughout the fieldwork period to ensure the safety and wellbeing of the respondents and health examination staff.

Appointment setting officers from the service providers provided a reminder call to reference persons two to three days prior to their appointments and managed any requests for changes to the appointments. At the appointed clinic or screening site, informed written consent was obtained by a fieldworker before the conduct of the health examination and a token of appreciation was given to the reference person after the completion of the health examination.

Data Quality Control

Informed consent forms validation

All the informed consent forms from the household interview and health examination were checked for completeness and accuracy of information captured. This included checks for missing information, consistency of information and any data-entry errors in the datasets.

Interview validation

Data quality control was conducted by a separate team of staff who were not involved in the survey interview fieldwork. For each interviewer, 40% of their survey interviews were randomly selected and subjected to quality control checks via telephone validation or audio audit. At least 30% of all quality control checks were conducted through telephone validation where respondents were asked to verify their residential address and responses to nine specific fields with the respondents concerned. The remaining 10% of the checks were audio audits where a quality control staff listened to segments of the interview and checked if the interviewer complied with the stipulated survey protocols in administering the questions.

Data verification and consistency check

The electronic survey questionnaire had built-in features that prompt data entry for fields that required a response or prompt data re-entry if data entered was outside the logical or valid field range. Built-in checks for relational fields were also incorporated to ensure that responses for those fields across different sections of the questionnaire were consistent. The built-in features and checks ensured that missing values, data-entry errors and inconsistent responses were eradicated or kept to the minimum where possible.

The database on the questionnaire records with the complete survey responses was subjected to a series of computer-programmed checks for missing values, valid field range and cross-field relational consistency. Missing values were obtained from respondents and data anomalies were clarified through direct verification with the respondents whenever necessary.

The database on the physical measurements and laboratory results were also checked for missing value, valid field range and cross-field relational consistency. Missing values and data anomalies were clarified with fieldworkers and corrected where possible.

Data Confidentiality

Throughout all stages of the survey, strict confidentiality on individual respondent information was maintained. All information, including audio recordings, questionnaire answers, health examination records collected for this survey would be kept strictly confidential, and stored in a secure, password-protected environment. Any reporting of findings would be done on a grouped basis such that no individual survey respondents can be identified. The identity of the respondents would remain confidential in publications (e.g. in national reports).

Age-Standardisation

Age-standardisation of prevalence rates take into account the changing age distribution of the population over the years and allows for more meaningful trend comparison, especially with an ageing population where prevalence rates of chronic diseases such as diabetes mellitus, hypertension, and hyperlipidaemia can be expected to increase. Age-standardisation of prevalence was calculated by the direct method, using the 2010 Census Singapore resident population as the standard (reference) population. The age-standardised rates were used for prevalence trends on diseases.

Response Rate

From a sample of 10,793 eligible households, 8,276 reference persons aged 18 to 79 years participated in the household interview, forming a response rate of 77% in NPHS 2021. 6,260 reference persons (76% of all reference persons) initially agreed to participate in the follow-on health examination. However, only 4,120 (66%) of those who agreed eventually attended the health examination.

Comparison of Demographic Profile between Survey Respondents and Resident Population

The demographic profiles of survey respondents from household interview were shown in Table 13.1. The survey sample was weighted to the age, ethnic group and gender distribution of the 2020 Singapore resident population to yield a similar population structure as the resident population. This was to ensure that the survey results apply to the general population.

Sample Weights

The sample weights for household interview were the composite of sample weights for the households and the selected household members. For each household, the sample weight (W_{HH}) comprised weight for non-response and unequal probability of selection stratified by planning regions and housing type and benchmarked to the total number of resident households. For each household member, the sample weight (W_{HH_Mem}) comprised weight for unequal probability of selection and weight for post-stratification stratified by age, gender and ethnic groups. The overall sample weight for household interview was the product of W_{HH} and W_{HH_Mem}.

Table 13.1: Percentage distribution (%) of the survey sample (unweighted) for household interview and 2020 Singapore resident population by demographic characteristics

	Household Interview Survey Sample (Unweighted)	Singapore Resident 2020
Total	100.0	100.0
18-29	12.4	19.3
30-39	20.2	18.6
40-49	21.3	19.1
50-59	16.7	18.8
60-69	17.9	16.0
70-79	11.5	8.1
Males	48.2	48.8
Females	51.8	51.2
Chinese	75.1	75.4
Malays	11.9	12.8
Indians	9.6	8.7
Others	3.4	3.1

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ACKNOWLEDGEMENTS

Annex A

Survey Questionnaire

NATIONAL POPULATION HEALTH SURVEY 2020/21
QUESTIONNAIRE A [FOR PERSONS AGED 18 YEARS & ABOVE]
全国人口健康调查 2020/21 问卷 A [供 18 岁或以上的人]

Serialhi								
Date of Interview	D	D	M	M	Y	Y	Y	Y

Interviewer's Full Name		KISH Table Used	
Household Information			
Number of eligible PERSONS (Singapore citizens/PRs aged <u>18 to 79 years</u>) in household: _____ 住户中合格的人士（<u>18 至 79 岁以下</u>的新加坡公民/永久居民）人数 Number of eligible SENIORS (Singapore citizens/PRs aged <u>65 years & above</u>) in household: _____ 住户中合格的乐龄人士（<u>65 岁或以上</u>的新加坡公民/永久居民）人数			

1. REGISTRATION

> **Interviewer:** I would like to inform that your individual information collected for the survey will be kept strictly confidential. Any reporting would be done on a collective basis such that no participants in the survey will be identifiable.
> 我想告诉您，本调查所收集的个人信息会严格保密。所有调查都会基于整体数据，因此不会泄漏您的任何个人信息。

1000. Year of birth:
出生年份

Y	Y	Y	Y

Age:
年龄

1001. Record gender of participant **[SA]**
请注明受访者的性别

1	Male	男性
2	Female	女性

1002. Ethnic group (as listed in NRIC) **[SA]**
种族（以身份证（NRIC）为准）

READ ONLY IF NECESSARY		
1	Chinese	华族
2	Malay	马来族
3	Indian	印度族
DO NOT READ		
4	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
[Go to Q1003]		

1003. Are you a Singapore Citizen? **[SA]**
您是新加坡公民吗？

READ			
1	Yes, I am a Singapore Citizen	是，我是新加坡公民	**[Go to Q1006a]**
2	No, I am a Permanent Resident	否，我是永久居民	**[Go to Q1007]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q1004]**

1006a. Did you previously hold citizenship of another country? **[SA]**
您以前是否持有另一个国家的公民身份？

READ			
1	Yes	是	**[Go to Q1006b]**
2	No	否	
DO NOT READ			**[Go to Q1004]**
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

1006b. What is the country of your <u>previous</u> citizenship? **[SA]**
您<u>以前</u>是哪个国家/地区的公民？

	READ ONLY IF NECESSARY	
1	Malaysia	马来西亚
2	Other Southeast Asian countries (e.g. Indonesia, Thailand, Philippines)	其他东南亚国家/地区（如印尼、泰国、菲律宾）
3	China	中国
4	Hong Kong, Taiwan, Japan or South Korea	香港、台湾、日本或韩国
5	India	印度
6	Other Asian countries (e.g. Pakistan, Russia, Saudi Arabia) not listed in (1) to (5) above	第 1 至 5 选项以外的亚洲国家（如巴基斯坦、俄罗斯，沙地阿拉伯）
7	Australia or New Zealand	澳洲或纽西兰
8	European countries (e.g. United Kingdom, France, Germany)	欧洲国家/地区（如英国、法国、德国）
9	USA or Canada	美国或加拿大
10	Others, please specify: 其它，请注明：_____	
	DO NOT READ	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
	[Go to Q1006c]	

1006c. In which year did you become a citizen of Singapore? **[SA]**
您是哪一年成为新加坡公民？

	Year	年
	DO NOT READ	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
	[Go to Q1004]	

1007.   **[Permanent Resident]** What is the country of your <u>current</u> citizenship? **[SA]**
您<u>目前</u>是哪个国家/地区的公民？

READ ONLY IF NECESSARY		
1	Malaysia	马来西亚
2	Other Southeast Asian countries (e.g. Indonesia, Thailand, Philippines)	其他东南亚国家/地区（如印尼、泰国、菲律宾）
3	China	中国
4	Hong Kong, Taiwan, Japan or South Korea	香港、台湾、日本或韩国
5	India	印度
6	Other Asian countries (e.g. Pakistan, Russia, Saudi Arabia) not listed in (1) to (5) above	第 1 至 5 选项以外的亚洲国家（如巴基斯坦、俄罗斯，沙地阿拉伯）
7	Australia or New Zealand	澳洲或纽西兰
8	European countries (e.g. United Kingdom, France, Germany)	欧洲国家/地区（如英国、法国、德国）
9	USA or Canada	美国或加拿大
10	Others, please specify: 其它，请注明：_____	
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q1004]		

1004.   May I know your height in metres, centimeters, or feet and inches? **[SA]**
请问您的身高是多少公尺、公分或英尺英寸？

	Height in cm, **OR** (nearest whole number)	公分，**或** （最近的整数）
	Height in metres, **OR** (nearest two decimal places)	公尺，**或** （最接近的两位小数）
	Feet (nearest whole number) **AND**	英尺（最近的整数)**与**
	Inches (nearest whole number)	英寸（最近的整数)
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q1005]		

1005.   May I know your weight in kilograms or pounds? **[SA]**
请问您的体重是多少公斤或磅？

	Weight in kg, **OR** (nearest one decimal place)	公斤，**或** （最接近的一位小数）
	Weight in lbs (nearest whole number)	磅 （最近的整数）
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定

END OF SECTION 1. GO TO SECTION 2.

2. DEMOGRAPHICS

2000.	What is your <u>current marital status</u>? **[SA]**
请问您<u>目前的婚姻状况</u>是？

USE SHOWCARD		
1	Never married	从未结婚
2	Married	已婚
3	Divorced	离婚
4	Separated	分居
5	Widowed	丧偶
DO NOT READ		
777	Refused	拒绝回答
[Go to Q2001]		

2001.	Do you have any children, including adopted and step-children? Please do not include foster children. **[SA]**
请问您是否有孩子,这包括领养的孩子、继子和继女？ 请不要包括寄养的儿童。

USE SHOWCARD			
1	Yes	有	**[Go to Q2002]**
2	No	没有	
DO NOT READ			**[Go to Q2003]**
777	Refused	拒绝回答	

2002.	Are any of your children within the following age range, including adopted and step-children? Please do not include foster children. **[SA]**
您是否有属于以下年龄段的孩子，这包括领养的孩子、继子和继女？请不要包括寄养的儿童。

READ			
a) Aged 6 years and below 6 岁或以下	1) Yes 是	2) No 否	777) Refused 拒绝回答
b) Aged 7 to 12 years 7 岁至 12 岁	1) Yes 是	2) No 否	777) Refused 拒绝回答
c) Older than 12 years 12 岁以上	1) Yes 是	2) No 否	777) Refused 拒绝回答
[Go to Q2003]			

2003. What is the <u>highest level of education</u>* that you have attained? **[SA]**
请问您的<u>最高教育程度</u>*是什么？

USE SHOWCARD AND DO NOT READ			
1	No formal education / Primary	未接受正规教育/小学
2	PSLE or equivalent	小六离校毕业证书或同等学历
3	Secondary	中学
4	'O' / 'N' level or NTC3 cert or its equivalent	'O' / 'N' 水准或全国技工证书第 3 级 (NTC 3) 或同等学历
5	'A' level / International Baccalaureate (IB)/ NTC 1-2 or Cert in office/ business skills or its equivalent, WSQ certificates	'A' 水准或/国际高中文凭(IB)/全国技工证书第 1-2 级(NTC 1-2)或办公室/商业技能证书或同等学历, WSQ 证书
6	Polytechnic Diploma	理工学院文凭
7	Other diploma & professional qualification	其它文凭或专职业资格证书
8	University and above	大学及以上学历
9	Others, please specify: 其它，请注明：_____		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q2004]			

* Refers to the highest level or standard which a person had passed or attained and was awarded a certificate, either through attendance at an institution of learning, through correspondence or self-study.
最高教育程度指的是一个人通过在教育机构学习、函授或自修并获得证书的最高教育水平或学位。

2004. Which of the following best describes your <u>main work status</u>* over the <u>last 12 months</u>? **[SA]**
下列哪项最符合您在<u>过去 12 个月</u>内的<u>主要工作情况</u>*？

USE SHOWCARD & READ ONLY IF NECESSARY			
1	Working	工作	**[Go to Q2005a]**
2	Full-time Student	全职学生	
3	Serving National Service	在服兵役/国民服役	**[Go to Q2006]**
4	Homemaker or housewife	家庭主妇/夫	
5	Retired	退休	**[Go to Q2005a]**
6	Unemployed	无工作	
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q2006]**
888	Don't know / Not sure	不知道／不肯定	

* Refers to what you spent most of the usual working hours on during the last 12 months.
主要工作情况指的是在过去 12 个月内的平常工作时间，您大部分的时间所做的事。

2005a.   Which industry do you work in, or used to work in? **[SA]**
您目前或以前从事哪一个行业的工作？

<write response 写回应>

2005b.   What is or was your occupation? **[SA]**
您目前或以前的职业是什么？

<write response 写回应>

	DO NOT READ (for internal coding only)		
1	Community, Social and Personal Services (e.g. education, nursing, arts, entertainment, public administration, defence, …)	社区，社会及个人服务业（如教育，护理，艺术，娱乐，公共行政，国防， 等等）
2	Manufacturing	制造业
3	Business Services (e.g. real estate, legal, accounting, architectural, R&D, travel, employment, …)	商业服务业（如房地产，法律，会计，建筑设计，科研开发，旅游，雇员介绍，等等）
4	Wholesale and Retail Trade	批发及零售业
5	Financial and Insurance Activities	金融险业
6	Information and Communications (e.g. publishing, media, telecommunications, information technology, …)	资讯通信业(如出版，媒体，电信，资讯科技 等等)
7	Others (e.g. transport, hotels, restaurants, construction)	其它(如交通，酒店，餐馆，建筑业，等等)
8	Have **never** worked	**从来没有**工作过
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q2006]		

2006. Over the last 12 months, what is the average earnings (S$) of your household <u>in one month</u>, before any deductions? Please include all sources of income such as bonuses, rental and investment income, and other sources such as pension and contributions from relatives and friends who are not staying in the same household. **[SA]**

在过去 12 个月内，您全家<u>每月</u>的平均总收入，在任何扣除前，大概是多少新币？请包括红利、租金和投资所得到的收入，也包括退休金和非同住在一起的家人或朋友所给的现金零用钱/资助。

USE SHOWCARD		
1	Below 2,000 per month	每月收入低于 2,000
2	2,000 – 3,999 per month	每月收入在 2,000 – 3,999 之间
3	4,000 – 5,999 per month	每月收入在 4,000 – 5,999 之间
4	6,000 – 9,999 per month	每月收入在 6,000 – 9,999 之间
5	10,000 – 14,999 per month	每月收入在 10,000 – 14,999 之间
6	15,000 & above per month	每月收入 15,000 及以上
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定

END OF SECTION 2. GO TO SECTION 3.

Interviewer: The next questions are about the time you spend doing work. Think of work as the things that you **have to do** such as paid or unpaid work, household chores or looking for a job. Activities at work, focus on occupational physical activity. For homemakers, this refers to household chores. For unemployed, this refers to looking for a job. For students, this refers to classes (including Physical Education if relevant).

接着我要询问您关于工作中的体力活动。工作是指您**不得不**做的事情，如有偿或无偿工作、家务活以及找工作。工作中的活动，主要是指与职业相关的体力活动。对于家庭主妇来说，这指的是家务劳动。对于无业人士来说，这指的是找工作。对于学生来说，这指的是上课（包括相关的体育课）。

In answering the next few questions, 'vigorous-intensity activities' are activities that require hard physical effort and cause large increases in breathing or heart rate, 'moderate-intensity activities' are activities that require moderate physical effort and cause small increases in breathing or heart rate.

在以下的问题，"*剧烈活动*" 是指需要大量体力并引起呼吸心跳显著增加的活动，"中等强度活动" 是指需引起呼吸心跳轻度增加的活动。

Activity at work （在工作中的活动）

3000. In a typical week, on how many days do you do *vigorous-intensity* activities for at least 10 minutes continuously as part of your work? **[SA]**
您在工作中通常每周有多少天会做持续至少 10 分钟的*剧烈*活动？

USE SHOWCARD FOR EXAMPLES			
	Days a week	每周几天	**[If 0 day, go to Q3001. Else go to Q3000a]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q3001]**
888	Don't know / Not sure	不知道 / 不肯定	

3000a. On a typical day on which you do *vigorous-intensity* activities for at least 10 minutes continuously, how much time do you spend doing such activities at work? **[SA]**
在您有做持续至少 10 分钟*剧烈*活动的平常一天里，您通常会花多长时间做此类活动？

	Hours	小时
	Minutes	分钟
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q3001]		

3001. In a typical week, on how many days do you do *moderate-intensity* activities for at least 10 minutes continuously as part of your work? **[SA]**
您在工作中通常每周有多少天会做持续至少 10 分钟的*中等强度*活动？

USE SHOWCARD FOR EXAMPLES			
	Days a week	每周几天	**[If 0 day, go to Q3002. Else go to Q3001a]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q3002]**
888	Don't know / Not sure	不知道／不肯定	

3001a. On a typical day on which you do *moderate-intensity* activities for at least 10 minutes continuously, how much time do you spend doing such activities at work? **[SA]**
在您有做持续至少 10 分钟 *中等强度*活动的平常一天里，您通常会花多长时间做此类活动？

	Hours	小时
	Minutes	分钟
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q3002]		

> **Interviewer:** The next questions **exclude** the physical activities at work that you have previously mentioned. Now, I would like to ask you about the usual way you travel to and from places. For example, going to work, shopping, market, or church, temple or mosque or going out for lunch.
> 以下的问题**不包括**上述工作时的体力活动。现在我要询问您通常的交通方式。例如，上班、购物、去市场、教堂、寺庙或清真寺，或出门用午餐。

Travel to and from places （出行时）

3002. In a typical week, on how many days do you walk or cycle (pedal cycle) for at least 10 minutes continuously to get to and from places? **[SA]**
您出行时，通常每周有多少天步行或骑脚踏车，持续至少 10 分钟？

	Days a week	每周几天	**[If 0 day, go to Q3100. Else go to Q3002a]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q3100]**
888	Don't know / Not sure	不知道／不肯定	

3002a. On a typical day when you walk or cycle (pedal cycle) for at least 10 minutes continuously, how much time in total do you spend walking or cycling? **[SA]**
在您有步行或骑脚踏车持续至少 10 分钟的一天里，您总共会花多长时间做此类活动？

	Hours	小时
	Minutes	分钟
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q3100]		

Recreational activities （娱乐性体力活动）

3100. The next questions exclude the work and transport activities that you have already mentioned. In the past 3 months, did you participate in any sports, exercise or walking during your leisure time? This includes sports, fitness and leisure recreational activities like swimming and badminton. **[SA]**
以下问题不包括上述的工作和出行时的体力活动。现在，我要询问一些有关运动、健身和娱乐活动的问题，如游泳和打羽毛球。在过去 3 个月内，您曾在闲暇时间参加过任何运动、健身或步行吗？

READ			
1	Yes	有	**[Go to Q3003]**
2	No	没有	**[Go to Q3100a]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

3100a. What is your <u>main reason</u> for not doing any leisure physical activity? **[SA]**
您没有参加任何娱乐性体力活动的<u>主要原因</u>是什么？

	DO NOT READ		
1	No time due to work / family commitment	由于工作/家庭责任而没有时间	
2	Too lazy	过于懒惰	
3	Too tired because of work commitment etc	因为工作责任等导致太累	
4	No companion to exercise with	没有同伴一同锻炼/ 运动	
5	Too old	年龄太大	
6	Health problems (e.g. difficulty in walking, knee pain, long-term injury)	健康不佳 （如行走困难、膝盖疼痛、长期受伤）	
7	Doctor advised not to exercise	医生建议不要锻炼/ 运动	
8	Have enough exercise at work	工作中进行了足够的锻炼/ 运动	
9	No interest	没有兴趣	
10	Accident/ short-term injuries	事故/暂时受伤	
11	Others, please specify: 其它，请注明：_____		
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	
	[Go to Q3006]		

3003. In a typical week, on how many days do you do *vigorous-intensity* sports, fitness, recreational or leisure activities for at least 10 minutes continuously? **[SA]**
您通常每周有多少天会做持续至少 10 分钟的*剧烈*运动、健身或娱乐性体力活动？

	USE SHOWCARD FOR EXAMPLES		
	Days a week	每周几天	**[If 0 day, go to Q3004. Else go to Q3003a]**
	DO NOT READ		
777	Refused	拒绝回答	**[Go to Q3004]**
888	Don't know / Not sure	不知道 / 不肯定	

3003a. On a typical day, how much time in total do you spend doing *vigorous-intensity* sports, fitness, recreational or leisure activities for at least 10 minutes continuously? **[SA]**
在您有做持续至少 10 分钟*剧烈*运动、健身或娱乐性体力活动的平常一天里，您总共会花多长时间做此类活动？

	Hours	小时
	Minutes	分钟
	DO NOT READ	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
	[Go to Q3004]	

3004. In a typical week, on how many days do you do *moderate-intensity* sports, fitness, recreational or leisure activities for at least 10 minutes continuously? **[SA]**

您通常每周有多少天会做持续至少 10 分钟的*中等强度*运动、健身或娱乐性体力活动？

USE SHOWCARD FOR EXAMPLES			
	Days a week	每周几天	**[If 0 day, go to Q3006. Else go to Q3004a]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q3006]**
888	Don't know / Not sure	不知道／不肯定	

3004a. On a typical day, how much time in total do you spend doing *moderate-intensity* sports, fitness, recreational or leisure activities for at least 10 minutes continuously? **[SA]**

在您有做持续至少 10 分钟*中等强度*运动、健身或娱乐性体力活动的平常一天里，您总共会花多长时间做此类活动？

	Hours	小时
	Minutes	分钟
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q3006]		

3006. In a typical week, on how many days do you do physical activities or exercises to **strengthen your muscles**? Examples of these activities include tai-chi, qi-gong, yoga, sit-ups, push-ups, the use of weight machines, free weights, or elastic bands. Do **not** include aerobic activities like walking, running, or cycling. **[SA]**

您通常每周有多少天会为了**增强肌肉**而做运动或体育锻炼？这些运动包括太极、气功、瑜伽、仰卧起坐或伏地挺身，以及那些使用举重器械、自由力量训练设备或弹力带的运动。请勿包括有氧运动，如健步行走、跑步或骑脚踏车。

***Interviewer note**: Record number of days per month if frequency is less than once a week. Respondents should complete at least 1 set of strength exercises to register as 1 day.*

USE SHOWCARD FOR EXAMPLES & DEFINITION OF 1 SET OF EXERCISE		
	Days per week **OR**	每周几天 **或**
	Days per month	每月几天
DO NOT READ		
666	Never do such activity or exercise	没有做这些运动或体育锻炼
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q3005]		

3005.　On a typical day, how much time in total do you usually spend sitting or reclining? **[SA]**
您通常每天花多长时间坐着或靠着？

	Hours	小时
	Minutes	分钟
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定

END OF SECTION 3. GO TO SECTION 4.

4. TOBACCO USE

Interviewer: The next questions are on cigarette smoking.
现在，我要问一些有关吸烟的问题。

4000.   Have you ever smoked cigarettes? **[SA]**
您曾吸过烟吗？

READ			
1	Yes	有	**[Go to Q4001]**
2	No	没有	**[Go to Q4016 Other Tobacco Products]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

4001.   How old were you when you first tried or experimented with smoking? **[SA]**
您第一次尝试吸烟时是几岁？

	Age	几岁
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q4002]		

4002.   Have you <u>ever</u> smoked at least 100 cigarettes, or about 5 packs in your **whole life**? **[SA]**
您<u>一生中</u><u>曾经</u>吸过的烟总数是否有至少 100 支（约 5 包）？

READ			
1	Yes	有	**[Go to Q4003]**
2	No	没有	**[Go to Q4016 Other Tobacco Products]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

4003.   Have you ever smoked cigarettes <u>daily</u>? **[SA]**
您曾经<u>每天</u>吸烟吗？

READ			
1	Yes	有	**[Go to Q4004]**
2	No	没有	**[Go to Q4005]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

4004. At what age did you start smoking daily? **[SA]**
您从几岁开始每天吸烟的？

	Age	几岁
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q4005]		

4005. How often do you smoke now, is it….? **[SA]**
您目前吸烟的频率，是…？

READ			
1	Daily*	每天*	**[Go to Q4006a]**
2	Occasionally	偶尔	
3	Have stopped smoking completely	已经彻底戒烟	**[If Q4003=1, go to Q4011 Ex-daily Smoker If Q4003=2, 777 or 888, go to Q4015 Ex-smoker]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q4016 Other Tobacco Products]**
888	Don't know / Not sure	不知道／不肯定	

** **Interviewer Note:** Please include respondents who have stop smoking daily temporarily because of religious fasting or medical reasons.*
请包括受访者因宗教禁食或医疗因素而暂时停止每天吸烟。

[If Q4005 = "Daily" or "Occasionally", ask the following question]
4006a. Can you show me the pack of cigarettes that you are currently smoking so that we can write down the flavour of cigarette? **[SA]**
您是否能让我看您所吸的烟的包装以便我记下其烟的口味？

Interviewer Note: If respondent does not have a pack or refused to show pack of cigarettes, please ask for the flavour. If there are more than 1 flavour smoked, record the flavour that was most often smoked.

DO NOT READ [Record flavour as shown for 4006a]		
1	Regular	
2	Menthol	
3	Mint	
4	Clove/ Kretek	
5	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q4006]		

4006.   Based on the pack of cigarettes, please code the theme of the graphic health warning. **[SA]**

	DO NOT READ [For internal coding by Interviewers]
1	Smoking causes blindness
2	Smoking causes cancer
3	Smoking causes heart disease
4	Smoking causes lung disease
5	Smoking increases the risk of miscarriage
6	When you're hooked, your child suffers too
7	Smoking can cause stillbirth
8	Smoking causes oral cancer
9	Smoking causes throat cancer
10	Smoking leads to death from lung cancer
11	Tobacco smoke harms your baby
12	Smoking causes premature ageing
13	Others please specify: _____
666	No graphic warnings
777	Refused to show the pack of cigarette

Note: No translation of graphic warning theme is required.

[If Q4005 = "Daily", go to Q4007. If Q4005 = "Occasionally", go to Q4023. Else, go to Q4016 Other Tobacco Products]

4007.   **[Daily Smoker]** On average, how many cigarettes do you smoke per day? **[SA]**
您平均每天吸多少支烟？

	Cigarettes daily	一天几支香烟
	DO NOT READ	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
	[Go to Q4019]	

4019.   **[Daily Smoker]** How soon do you smoke your first cigarette after you wake up? You can state in terms of minutes or hours after waking up. **[SA]**
您醒来之后，大概花了多久的时间才开始吸第一支烟？您的回答可以是以几分钟或几小时以内。

	DO NOT READ	
1	5 minutes or below	5 分钟或以下
2	6 to 30 minutes	6 至 30 分钟
3	31 to 60 minutes	31 至 60 分钟
4	More than 60 minutes	60 分钟以上
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
	[Go to Q4022]	

4022. **[Daily Smoker]** What is your <u>main reason</u> for smoking now? **[SA]**
您现在吸烟的主要原因是什么？

	DO NOT READ	
1	To feel **relaxed**/ to **relieve stress**/ to help me cope with problems	感觉**放松**/**释放压力**/有助于解决问题
2	Addiction/ would feel **unbearable** if I do not smoke	烟瘾/如果不吸烟，就觉得**很难受**
3	Out of habit	出于习惯
4	Smoking is **enjoyable**	吸烟**令人愉快**
5	**Boredom**	**无聊**
6	To be like my **family members**/ relatives/ boyfriend/ girlfriend/ friends / colleagues	模仿**家庭成员**/亲戚/男友/女友/朋友/同事
7	To **entertain** clients/ friends	**招待**客户/朋友
8	To help me **concentrate**	有助于**集中精神**
9	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
	[Go to Q4008]	

4008. **[Daily Smoker]** Do you have any intention to quit smoking? **[SA]**
您是否有戒烟的打算？

	READ AND USE SHOWCARD	
1	Yes, I plan to quit smoking within the next month	有，我打算在下个月内戒烟
2	Yes, I plan to quit smoking within the next 6 months	有，我打算在未来 6 个月内戒烟
3	Yes, I plan to quit smoking within the next 12 months	有，我打算在未来 12 个月内戒烟
4	Yes, I plan to quit smoking within the next 5 years	有，我打算在未来 5 年内戒烟
5	Yes, I plan to quit smoking sometime in the future	有，我打算在未来的某个时候戒烟
6	No, I do not plan to quit smoking completely, but plan to cut down on the number of cigarettes smoked	我没有打算完全戒烟，但有打算减少吸烟
7	No, I do not plan to quit smoking or cut down on the number of cigarettes smoked	我没有打算戒烟或减少吸烟
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
	[Go to Q4009]	

4009. **[Daily Smoker]** In the last 12 months, have you tried to stop smoking for at least 24 hours? **[SA]**
在过去 12 个月内，您是否有尝试连续至少 24 小时不吸烟？

READ			
1	Yes	有	**[Go to Q4010]**
2	No	没有	**[Go to Q4016 Other Tobacco Products]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

4010. **[Daily Smoker]** How many times did you try to quit smoking during the last 12 months? **[SA]**
在过去 12 个月内，您曾经几次尝试戒烟？

	Number of times in last 12 months	在过去12个月内有几次
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q4016 Other Tobacco Products]		

[If Q4005 = "Occasionally", go to Q4023. Else, go to Q4016 Other Tobacco Products]

4023. **[Occasional Smoker]** On average, how many cigarettes do you smoke? You can tell me the number of cigarettes per week or per month. **[SA]**
您平均吸多少支烟？您的回答可以是以每周或每月几支烟。

	Cigarettes per week, **OR**	每周几支烟，**或**
	Cigarettes per month	每月几支烟
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q4024]		

4024. **[Occasional Smoker]** What is your <u>main reason</u> for smoking now? **[SA]**
您现在吸烟的主要原因是什么？

DO NOT READ		
1	To feel **relaxed**/ to **relieve stress**/ to help me cope with problems	感觉**放松**/**释放压力**/有助于解决问题
2	Addiction/ would feel **unbearable** if I do not smoke	烟瘾/如果不吸烟，就觉得**很难受**
3	Out of habit	出于习惯
4	Smoking is **enjoyable**	吸烟**令人愉快**
5	**Boredom**	**无聊**
6	To be like my **family members**/ relatives/ boyfriend/ girlfriend/ friends / colleagues	模仿**家庭成员**/亲戚/男友/女友/朋友/同事
7	To **entertain** clients/ friends	**招待**客户/朋友
8	To help me **concentrate**	有助于**集中精神**
9	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q4025]		

4025. **[Occasional Smoker]** Do you have any intention to quit smoking? **[SA]**
您是否有戒烟的打算？

READ AND USE SHOWCARD		
1	Yes, I plan to quit smoking within the next month	有，我打算在下个月内戒烟
2	Yes, I plan to quit smoking within the next 6 months	有，我打算在未来 6 个月内戒烟
3	Yes, I plan to quit smoking within the next 12 months	有，我打算在未来 12 个月内戒烟
4	Yes, I plan to quit smoking within the next 5 years	有，我打算在未来 5 年内戒烟
5	Yes, I plan to quit smoking sometime in the future	有，我打算在未来的某个时候戒烟
6	No, I do not plan to quit smoking completely, but plan to cut down on the number of cigarettes smoked	我没有打算完全戒烟，但有打算减少吸烟
7	No, I do not plan to quit smoking or cut down on the number of cigarettes smoked	我没有打算戒烟或减少吸烟
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q4026]		

4026.	**[Occasional Smoker]** How many times did you try to quit smoking during the last 12 months? **[SA]**
在过去 12 个月内，您曾经尝试戒烟过几次？

	Number of times in last 12 months	在过去12个月内有几次	**[If 0 time, go to Q4016 Other Tobacco Products. Else go to Q4027]**
	DO NOT READ		
777	Refused	拒绝回答	**[Go to Q4016 Other Tobacco Products]**
888	Don't know / Not sure	不知道／不肯定	

4027.	**[Occasional Smoker]** What was the <u>main reason</u> for which you attempted to stop smoking? **[SA]**
您试图戒烟的<u>主要原因</u>是什么？

	DO NOT READ	
1	**Experienced** the ill effects of smoking	身受吸烟之害
2	Pressure to stop from the environment (e.g. **smoking bans**)	迫于环境（例如**禁烟令**）的压力而戒烟
3	Concerned about the health of those around me (through **passive smoking**)	担心周围人群的健康（通过**二手烟**）
4	**Concerned** about the **harmful effects** of smoking	**关注**吸烟的**害处**
5	Pressure/ advice to stop from **family/ friends/ colleagues**	出于**家庭/朋友/同事**的压力/建议而戒烟
6	Cigarettes have become too **expensive**	香烟价格太**贵**
7	**Social stigma** associated with smoking	吸烟不光彩
8	Advised to stop smoking by my **doctor**	**医生**建议我戒烟
9	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q4016 Other Tobacco Products]		

[If Q4005 = "Have stopped smoking completely" and Q4003=1, go to Q4011. Else if Q4005 = "Have stopped smoking completely" and Q4003=2, 777 or 888, go to Q4015.]

4011.	**[Ex-daily Smoker]** How long has it been since you last smoked daily? **[SA]**
您已经有多久停止每日吸烟的习惯？

	Number of years, **OR**	几年，**或**
	Number of months	几月
	DO NOT READ	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q4012]		

4012. **[Ex-daily Smoker]** How long did you smoke daily before you gave up smoking? **[SA]**
在戒烟之前，您曾经有多久每天吸烟？

	Number of years, **OR**	几年，**或**
	Number of months	几月
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q4015]		

4015. **[Ex-smoker]** How many times did you try to quit smoking before you succeeded? **[SA]**
在戒烟成功前，您曾经尝试戒烟过几次？

	Number of times	几次
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q4013]		

4013. **[Ex-smoker]** What was the <u>main reason</u> which made you stop smoking completely? **[SA]**
您彻底戒烟的<u>主要原因</u>是什么？

DO NOT READ		
1	**Experienced** the ill effects of smoking	**身受**吸烟之害
2	Pressure to stop from the environment (e.g. **smoking bans**)	迫于环境（例如**禁烟令**）的压力而戒烟
3	Concerned about the health of those around me (through **passive smoking**)	担心周围人群的健康（通过**二手烟**）
4	**Concerned** about the **harmful effects** of smoking	**关注**吸烟的**害处**
5	Pressure/ advice to stop from **family/ friends/ colleagues**	出于**家庭/朋友/同事**的压力/建议而戒烟
6	Cigarettes have become too **expensive**	香烟价格**太贵**
7	**Social stigma** associated with smoking	吸烟**不光彩**
8	Advised to stop smoking by my **doctor**	**医生**建议我戒烟
9	Others, please specify: 其它，请注明：＿＿＿＿＿＿＿＿＿＿	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q4014]		

4014. **[Ex-smoker]** How did you quit smoking? **[MA]**
请问您是怎样戒烟的？

		DO NOT READ	
1	Abstained from smoking on own accord	自我克制主动戒烟	
2	Attended smoking cessation programme/counselling in public/private hospitals	参加公立/私人医院的戒烟计划/辅导	
3	Attended smoking cessation programme/counselling in public (including polyclinics) /private clinics	参加公立(包括综合诊所)/私人诊所的戒烟计划/辅导	
4	Attended smoking cessation programme/counselling in the workplace	参加工作场所的戒烟计划/辅导	
5	Attended smoking cessation programme/counselling through a retail pharmacy	通过零售药店参加戒烟计划/辅导	
6	Through talking to a quit advisor at Quitline	通过与戒烟热线的戒烟顾问沟通	
11	Through participating in I Quit programme (constitutes SMS and Quitline as an option for smokers)	通过参加全国戒烟运动"I Quit"	
7	By nicotine replacement therapy (e.g. nicotine patch, inhaler)	通过尼古丁替代治疗（例如尼古丁贴片、尼古丁吸入剂）	
8	By herbal remedy	通过草药疗法	
9	Used medication (e.g. Bupropion/ Zyban, Varenicline/Champix)	药物治疗（例如耐烟盼牌的安非他酮、戒必适牌的伐尼克兰）	
10	Others, please specify: 其它，请注明：_____		
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	
[Go to Q4016]			

4016. **[Ask All]** Other than cigarettes, which of the following tobacco products do you currently smoke? **[SA]**

除了香烟，您目前吸的是以下哪种烟草产品？

USE SHOWCARD					
List of other tobacco products **其它烟草产品的列表**	1) Yes, Daily 是, 每天	2) Yes, Occasionally 是, 偶尔	3) No 否	777) Refused 拒绝回答	888) Don't know / Not sure 不知道 / 不肯定
4016a. Cigar 雪茄	☐	☐	☐	☐	☐
4016b. Cigarillos 迷你雪茄	☐	☐	☐	☐	☐
4016c. E-cigarette / E-vapouriser 电子香烟	☐	☐	☐	☐	☐
4016d. Heated Tobacco 加热烟草	☐	☐	☐	☐	☐
4016e. Beedis 比迪烟	☐	☐	☐	☐	☐
4016f. Rolled-on-your-own/ Ang Hoon (loose tobacco) 卷烟	☐	☐	☐	☐	☐
4016g. Pipe Tobacco 烟丝	☐	☐	☐	☐	☐
4016h. Others 其它 **[Go to Q4016h(i) for "1" or "2"]**	☐	☐	☐	☐	☐

4016h(i) **[If respondent selected "1" or "2" for Q4016h, please specify below]**:

其它（请注明）：

4020. **[Ask All Smokers]** When you first started smoking, which of the following tobacco product did you smoke? **[SA]**

在您刚开始吸烟时，您吸的是以下哪种烟草产品？

USE SHOWCARD		
1	Cigarettes	香烟
2	Cigar	雪茄
3	Cigarillo	迷你雪茄
4	E-cigarette / E-vapouriser	电子香烟
5	Heated Tobacco	加热烟草
6	Beedis	比迪烟
7	Rolled-on-your-own/ Ang Hoon (loose tobacco)	卷烟
8	Pipe Tobacco	烟丝
9	Others, please specify: 其它，请注明: _____	
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q4021]		

4021. **[Ask All Smokers]** What was the flavour of *(tobacco product mentioned in 4020)* that you smoked when you first started smoking? **[SA]**

在您刚开始吸烟时，您吸的_____是什么口味？

USE SHOWCARD		
1	Regular	普通味
2	Menthol	薄荷醇味
3	Mint	薄荷味
4	Clove/ Kretek	丁香味
5	Others, please specify: 其它，请注明: _____	
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定

END OF SECTION 4. GO TO SECTION 5.

5. DIETARY PRACTICES

Interviewer: Now I am going to ask you some questions about your eating practices. Please think about the food and drinks consumed at home and outside for the past one month.
现在，我想问您一些关于饮食习惯的问题。请您回想起过去 1 个月内在家和在外的饮食习惯。

5000. Excluding fruit juices, how many servings* of fruits do you **<u>USUALLY</u>** eat? You can tell me in servings per day, per week or per month. **[SA]**
除了果汁以外，您**通常**吃几份水果？您的回答可以是以每天，每周或每个月几份。

USE SHOWCARD & EXPLAIN WHAT CONSTITUTES 1 SERVING		
	Servings per day, **OR**	每天几份，**或**
	Servings per week, **OR**	每周几份，**或**
	Servings per month	每月几份
DO NOT READ		
666	Do not eat fruits	不吃水果
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q5002]		

** **Interviewer Note:** Please specify the number of servings to the nearest 0.5 serving.*
请将份量注明为最接近的半份。

5002. How many servings* of vegetables do you **<u>USUALLY</u>** eat? You can tell me in servings per day, per week or per month. **[SA]**
您**通常**吃几份蔬菜？您的回答可以是以每天，每周或每个月几份。

USE SHOWCARD & EXPLAIN WHAT CONSTITUTES 1 SERVING		
	Servings per day, **OR**	每天几份，**或**
	Servings per week, **OR**	每周几份，**或**
	Servings per month	每月几份
DO NOT READ		
666	Do not eat vegetables	不吃蔬菜
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q5003]		

** **Interviewer Note:** Please specify the number of servings to the nearest 0.5 serving.*
请将份量注明为最接近的半份。

5003. The next question is about wholegrain or wholemeal foods that you usually eat. How often do you eat wholegrain foods such as brown rice, wholemeal bread, wholemeal cereals or oats, wholemeal biscuits or noodles? You can answer me in number of times per day, per week or per month. **[SA]**

下一道问题与您常食用的全谷物或全麦食品有关，这些食品包括糙米、全麦面包、全麦片或燕麦、全麦饼干或面条。您多常食用这些食品？您的回答可以是以每天，每周或每个月几次。

USE SHOWCARD FOR TYPES OF WHOLEGRAINS		
	Times per day, **OR**	每天几次，**或**
	Times per week, **OR**	每周几次，**或**
	Times per month	每月几次
DO NOT READ		
666	Do not eat wholegrain or wholemeal foods	不吃全谷物或全麦食品
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q5004]		

5004. How often do you drink canned, bottled or packet drinks? For example, fruit juice, soft drinks, fruit drinks, cordials/syrups, yoghurt drinks, Yakult/Vitagen, soya milk, 2 in 1 or 3 in 1 coffee or tea. You can tell me in number of times per day, per week or per month. **[SA]**

您多常饮用罐装，瓶装或纸包饮品？例如 果汁、汽水、果味饮品、浓缩果汁饮品/糖浆、酸奶饮品、益力多/维他精(Yakult/Vitagen)、豆奶、二合一或三合一即溶咖啡或溶茶。您的回答可以是以每天，每周或每个月几次。

USE SHOWCARD FOR TYPES OF CANNED, BOTTLED OR PACKET DRINKS			
	Times per day, **OR**	每天几次，**或**	
	Times per week, **OR**	每周几次，**或**	**[Go to Q5005]**
	Times per month	每月几次	
DO NOT READ			
666	Do not drink canned, bottled or packet drinks	不喝罐装，瓶装或纸包饮品	
777	Refused	拒绝回答	**[Go to Q5006]**
888	Don't know / Not sure	不知道／不肯定	

5005. During the times that you drink canned, bottled or packet drinks, how many servings* do you **USUALLY** drink? **[SA]**

当您饮用罐装，瓶装或纸包饮品时，您**通常**喝几份？

USE SHOWCARD & EXPLAIN WHAT CONSTITUTES 1 SERVING		
	Number of Servings	几份
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q5006]		

** **Interviewer Note:** Please specify the number of servings to the nearest 0.5 serving.*
请将份量注明为最接近的半份。

5006. How often do you drink freshly prepared drinks? For example, coffee, tea, Milo, Horlicks, Ovaltine, hot/iced chocolate and bubble tea. You can tell me in the number of times per day, per week or per month. **[SA]**

您多常饮用新鲜冲制的饮品？例如 咖啡、茶、美禄、好立克、阿华田、热/冷巧克力饮品和泡泡茶。您的回答可以是以每天，每周或每个月几次。

USE SHOWCARD FOR TYPES OF FRESHLY PREPARED DRINKS			
	Times per day, **OR**	每天几次，**或**	
	Times per week, **OR**	每周几次，**或**	**[Go to Q5007]**
	Times per month	每月几次	
DO NOT READ			
666	Do not drink freshly prepared drinks	不喝新鲜冲制的饮品	
777	Refused	拒绝回答	**[Go to Q5009]**
888	Don't know / Not sure	不知道 / 不肯定	

5007. Of the freshly prepared drinks, how often do you select the no sugar/less sugar option? **[SA]**

在这些新鲜冲制的饮品当中，您会多常选择无糖或少糖的饮品？

READ		
1	Always	每次
2	Mostly	时常
3	Half of the time	一半的时间
4	Sometimes	偶尔
5	Never / Almost rarely	完全没有/几乎没有
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q5009]		

5009. How often do you eat food bought from hawker centres, coffee shops, food courts or canteens? You can tell me in number of times per day, per week or per month. **[SA]**

您多常吃小贩中心，咖啡店，食阁或食堂买来的食物？您的回答可以是以每天，每周或每个月几次。

	Times per day, **OR**	每天几次，**或**
	Times per week, **OR**	每周几次，**或**
	Times per month	每月几次
DO NOT READ		
666	Do not eat food bought from hawker centres, coffee shops, food courts or canteens	不吃小贩中心，咖啡店，食阁或食堂买来的食物
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q5010]		

5010. How often do you eat food bought from fast food restaurants, restaurants or cafes? You can tell me in number of times per day, per week or per month. **[SA]**

您多常吃快餐店，餐馆或咖啡馆买来的食物？您的回答可以是以每天，每周或每个月几次。

	Times per day, **OR**	每天几次，**或**
	Times per week, **OR**	每周几次，**或**
	Times per month	每月几次
DO NOT READ		
666	Do not eat food bought from fast food restaurants, restaurants or cafes	不吃快餐店、餐馆或咖啡馆买来的食物
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定

END OF SECTION 5. GO TO SECTION 6.

6. ALCOHOL CONSUMPTION

Interviewer: Now I am going to ask you some questions about alcohol consumption.
现在，我要问您一些关于饮酒的问题。

6000. In the past 12 months, how frequent did you have at least one drink? **[SA]**
在过去 12 个月内，您喝至少一杯酒的频率是多少？

	READ AND USE SHOWCARD		
1	5 or more days a week	每周 5 天或更多	
2	1-4 days per week	每周 1 至 4 天	**[Go to Q6001]**
3	1-3 days a month	每月 1 至 3 天	
4	Less than once a month	每月少于一天	
5	Did not drink alcohol in the past 12 months	在过去 12 个月内没有喝酒	**[Go to Section 7]**
	DO NOT READ		
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

6001. What alcoholic drink do you consume most often? **[SA]**
您最常喝的是哪种酒？

	READ AND USE SHOWCARD	
1	Beer	啤酒
2	Stout	烈性黑啤酒
3	Wines (champagne, port)	葡萄酒（香槟酒、波特酒）
4	Spirits (gin, whisky, rum, brandy, vodka)	烈酒（杜松子酒、威士忌酒、朗姆酒、白兰地酒、伏特加酒）
5	Alcoholic fruit drinks, premixed drinks or alcopops	酒精水果饮品或其他预混合酒
6	Others, please specify: 其它，请注明：_____	
7	No specific preference	没有特别的偏好
	DO NOT READ	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
	[Go to Q6003]	

6003. On the days that you drank alcohol, about how many drinks did you usually have? **[SA]**
每当喝酒时，您通常会在一天内喝几杯含有酒精的饮料？

USE SHOWCARD & EXPLAIN WHAT CONSTITUTES 1 DRINK		
	Number of drinks per day	一天内几杯饮料
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q6002]		

6002. How many times during the past month did you have X **[X = 5 for men, X = 4 for women]** or more drinks in any one drinking session? Please include all types of alcoholic drinks. **[SA]**
在过去一个月内，您曾经有多少次在一次饮酒过程中喝了 X ［男性 X = 5，女性 X = 4］杯或更多？请包括所有类型的酒精饮品。

USE SHOWCARD & EXPLAIN WHAT CONSTITUTES 1 DRINK			
	Times in the past month	过去一个月内有几次	**Go to Q6005**
DO NOT READ			
666	Did not drink X **[X = 5 for men, X = 4 for women]** or more drinks in any one drinking session	没有在一次饮酒过程中喝超过 X ［男性 X = 5，女性 X = 4］杯	**Go to Q6005**
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

6005. In the past 12 months, did you ever experience any of the following events due to drinking? **[SA]**
在过去 12 个月内，您曾经因为喝酒而经历以下情形吗？

USE SHOWCARD				
List of events 情形	1) Yes 是	2) No 否	777) Refused 拒绝回答	888) Don't know / Not sure 不知道／不肯定
a. Passed out from drinking too much or was unable to remember what happened the night before 因过度饮酒而昏迷，或无法想起昨晚所发生的事情	☐	☐	☐	☐
b. Got injured or injured someone else 受伤或打伤其他人	☐	☐	☐	☐
c. Missed work / school the next day 隔天无法上班/上学	☐	☐	☐	☐
d. Experienced a hangover 经历宿醉	☐	☐	☐	☐
e. Engaged in sexual activites 经历性行为	☐	☐	☐	☐
f. Smoked a cigarette only when drinking 因喝酒而吸烟	☐	☐	☐	☐

END OF SECTION 6. GO TO SECTION 7.

7. DIABETES

Interviewer: Now, I would like to ask you some questions about diabetes. Diabetes occurs when there is excess sugar in the blood. Oral medications and insulin injections may be required if a person with diabetes is unable to adequately control his blood sugar levels despite lifestyle changes.
现在，我要问您一些关于糖尿病的问题。血糖过高会导致糖尿病。若糖尿病患者在改变生活方式之后仍然无法控制血糖，那他/她就或许需要以服用口服降糖药或胰岛素注射来控制病情。

7000. Can you tell me who in your immediate family* has diabetes, excluding diabetes that happens only during pregnancy? **[MA]**
您的直系家庭*中谁患有糖尿病？这不包括只在怀孕期间患上的糖尿病。

Interviewer note: Diabetes that happens only during pregnancy refer to diabetes that develop during pregnancy and usually stop at the end of pregnancy.

READ (May choose more than one answer)		
1	Parents	父母
2	Siblings	兄弟姐妹
3	Children	儿女
4	No one in my family has diabetes	没有家人患有糖尿病
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q7001]		

* Exclude spouse and non-blood relatives
不包括配偶及无血缘关系的亲戚

7001. Have you ever been told by a western-trained doctor that you have diabetes? **[SA]**
西医是否曾经告诉过您，您患有糖尿病？
[If 'Yes' and respondent is female, ask "*Was this only when you were pregnant?*"**]**

READ			
1	Yes	是	**[Go to Q7001a]**
2	Yes, but only during pregnancy	是，不过仅在怀孕时	**[Go to Q7004]**
3	No	否	
4	No, pre-diabetes or borderline diabetes	否，糖尿病前期或临界性糖尿病	
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

7001a. Does your doctor currently give you treatment for your diabetes such as tablets or injections? **[SA]**
医生目前是否有给您治疗糖尿病的药物或注射？

READ			
1	Yes	有	**[Go to Q7001b]**
2	No	没有	**[Go to 7002]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to 7002]**
888	Don't know / Not sure	不知道／不肯定	

7001b. What type of medication are you on? **[SA]**
您正在使用哪种治疗方式？

READ		
1	Insulin injections	胰岛素注射
2	Oral medications for diabetes	口服降糖药
3	Both insulin injections & oral medications for diabetes	同时使用胰岛素注射和口服降糖药
4	Others, please specify: 其它，请注明: ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿	
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to 7002]		

7002. How many times in the past 12 months have you seen a doctor for your diabetes? **[SA]**
在过去 12 个月内，您曾经有几次因为糖尿病看医生？

	Number of times in the past 12 months	在过去 12 个月内有几次
DO NOT READ		
666	Did not see a doctor for diabetes	没有因为糖尿病看医生
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to 7003]		

7003. Where do you seek treatment for your diabetes most of the time? **[SA]**
大多数时侯，您是去哪里治疗糖尿病的？

		DO NOT READ	
1	Private GP	家庭医生	
2	Polyclinic	综合诊所	
3	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）	
4	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）	
5	Others, please specify: 其它，请注明：_____		
666	None, do not seek treatment for diabetes	否， 没有为糖尿病寻求治疗	
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	
[Version A: Go to 7006]			

7006. On average, how often do you check your blood sugar? You can tell me in number of times per day, per week, per month or per year. Please include checks done by yourself, family member or friend, but do not include checks by a health professional. **[SA]**
您平均有多常检查您的血糖？您的回答可以是以每天，每周，每个月或每年几次。请包括自行检查以及家人或朋友帮您检查的次数，但不包括医疗专业人员检查的次数。

	Times per day, **OR**	每天几次，**或**	
	Times per week, **OR**	每周几次，**或**	
	Times per month, **OR**	每月几次，**或**	
	Times per year	每年几次	
	DO NOT READ		
666	Do not check my blood sugar	从来没检查过	
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	
[Go to Q7007]			

7007. At what age were you first diagnosed with diabetes? **[SA]**
您是在几岁时被西医诊断患有糖尿病？

	Age	几岁	
	DO NOT READ		
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	
[Go to Q7008]			

7008. What lifestyle or dietary modifications did you make to control your diabetes? **[MA]**
您是通过哪些生活或饮食习惯改变来控制糖尿病的？

	DO NOT READ (May choose more than one answer)	
1	Lose weight/ maintain ideal weight	减肥/保持理想体重
2	Reduce intake of sugar, rice, bread	减少糖、米饭、面包的摄取量
3	Increase intake of wholemeal bread, brown rice, vegetables and high fibre food	增加全麦面包、糙米、蔬菜和高纤维食物的摄取量
4	Reduce fat intake	减少脂肪的摄取量
5	Cutting down/ stop smoking	少吸烟/戒烟
6	Exercise	锻炼身体/运动
7	Reduce alcohol intake	少喝酒
8	Others, please specify: 其它，请注明: _____	
666	No lifestyle or dietary modifications	没有改变生活或饮食习惯
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
	[Go to Q7009]	

7009. A test for haemoglobin "A one C" (HbA1c) measures the average level of blood sugar over the past 3 months. How many times in the past 12 months did a doctor, nurse or health professional checked you for HbA1c? **[SA]**
糖化血红蛋白"A one C"（HbA1c）测试能够测量过去 3 个月内的平均血糖值。在过去 12 个月内，医生、护士或医疗专业人员为您检验过几次糖化血红蛋白 "A one C"（HbA1c）测试呢？

	Number of times in the past 12 months	在过去 12 个月内有几次
	DO NOT READ	
666	Never heard of this test	没听说过此项测试
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
	[Go to Section 8]	

7004. Blood tests can be used to check for diabetes. When was the last time you had a blood test to check for diabetes? Please exclude checks done by yourself. **[SA]**

血糖检验是一种测试糖尿病的方法。您最后一次进行血糖测试是什么时候？请不要包括自己做的检查。

Interviewer note: Blood tests can be a fasting plasma glucose test (FPG), casual plasma glucose test, oral glucose tolerance test (OGTT) or HbA1c test.

	READ ONLY IF NECESSARY		
1	1 year ago or less	过去 1 年或少于 1 年	
2	More than 1 year to 2 years	超过 1 年但在 2 年以内	
3	More than 2 years to 3 years	超过 2 年但在 3 年以内	**[Go to Q7005]**
4	More than 3 years to 5 years	超过 3 年但在 5 年以内	
5	More than 5 years ago	超过 5 年前	
6	Never been checked	从未检查过	
	DO NOT READ		
777	Refused	拒绝回答	**[Go to Q7012]**
888	Don't know / Not sure	不知道 / 不肯定	

7005. Where did you go for your last blood test for diabetes? **[SA]**

您的最后一次血糖测试是在哪里进行的？

Interviewer note: If respondent answers "Private GP", probe to check if they are participating in the Screen for Life programme where they pay $0, $2 or $5 for the test.

	DO NOT READ	
1	Private GP (Screen for Life)	家庭医生（"定期体检， 益您一生"）
2	Private GP (Non-Screen for Life)	家庭医生（非"定期体检， 益您一生"）
3	Polyclinic	综合诊所
4	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）
5	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）
6	Workplace	工作场所
7	Community venue	社区场所
8	Overseas clinic/ hospital	国外的诊所或医院
9	Army camp	军队兵营
10	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
	[Go to Q7010]	

7010. Why did you go for your last blood test to check for diabetes? **[MA]**
您最后一次进行血糖测试的原因是什么？

	DO NOT READ (May choose more than one answer)		
1	Know the importance of screening	了解检查的重要性
2	Advised by doctors / nurses	医生/护士建议
3	My family members / friends / colleagues encouraged me	家庭成员/朋友/同事的鼓励
4	Read/ heard about it / saw an advertisement about checking for diabetes	读到/听到这项检查/看到糖尿病检查的广告
9	Received a letter e.g. Screen for Life letter to encourage me to go for screening	收到鼓励我去检查的信件例如"定期体检， 益您一生"的信件
5	Ad-hoc health screening	临时健康检查
6	Routine check-up	定期体检
7	Company / application health screening (e.g. pre-employment or permanent residency application)	公司/申请健康检查（例如入职前或永久居留申请）
8	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
	[Go to Q7011]	

7011. Which of the following blood test have you taken for your last blood test to check for diabetes? **[SA]**
您最后一次检查糖尿病时接受了以下哪一种血糖测试？

	READ		
1	Fasting blood test (e.g. fasting plasma glucose (FPG) or oral glucose tolerance (OGTT))	空腹验血测试（例如空腹血糖测试(FPG)或口服葡萄糖耐量测试(OGGT))
2	Non-fasting blood test (e.g. casual plasma glucose, HbA1c)	非空腹血液测试（例如随机血浆葡萄糖测试或糖化血红蛋白"A one C"测试）
	DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
	[Go to Section 8]	

7012.   What are your reasons for not having a blood test to check for diabetes? **[MA]**
您从未验血检查糖尿病的原因有哪些？

	DO NOT READ (May choose more than one answer)	
1	Not necessary as I am healthy	因为我很健康，所以不需要
2	Never heard about it	从未听说过
3	Too old	年纪太大
4	Not at risk	没有危险
5	Cost of the test is too expensive	检查费用太高
6	Afraid of knowing the results	害怕知道检查结果
7	Inconvenient (e.g. clinic/hospital too far away, wait at clinic/hospital too long, English signs at clinic/hospital too confusing)	不方便（例如诊所/医院太远，在诊所/医院等待的时间太长，诊所/医院的英文标示难以理解）
8	Not important	不重要
9	No time due to work/ family commitment (e.g. need to take leave, make alternative arrangement with family members)	由于工作/家庭责任，没时间（例如需要请假、和家庭成员另有安排）
10	Cannot afford cost of treatment for diabetes	承担不起治疗糖尿病的费用
11	Cannot do anything if diabetes is detected	即使检查出糖尿病，也无能为力
12	Too young	年纪太小
13	Fated if I get diabetes	如果得了糖尿病，那是命运的安排
14	Not suggested by doctors	医生没有建议
15	Don't know where to go	不知道去哪里检查
16	Painful test	检查太痛苦
17	Others, please specify: 其它，请注明：＿＿＿＿＿＿＿＿＿＿＿＿＿＿	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定

END OF SECTION 7. GO TO SECTION 8.

8. HYPERTENSION

Interviewer: Next, I would like to ask you some questions about hypertension, also commonly known as high blood pressure.

接下来，我要问您一些关于高血压的问题。

8000. Can you tell me who in your immediate family* has high blood pressure, exclude high blood pressure that only happens during pregnancy? **[MA]**

您的直系家庭*中谁患有高血压？这不包括只在怀孕期间患上的高血压。

Interviewer note: High blood pressure that happens only during pregnancy refer to high blood pressure that develop during pregnancy and usually stop at the end of pregnancy.

READ (May choose more than one answer)		
1	Parents	父母
2	Siblings	兄弟姐妹
3	Children	儿女
4	No one in my family has high blood pressure	没有家人患有高血压
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q8001]		

* Exclude spouse and non-blood relatives
不包括配偶及无血缘关系的亲戚

8001. Have you ever been told by a western-trained doctor that you have high blood pressure? **[SA]**
西医是否曾经告诉过您，您患有高血压？
[If 'Yes' and respondent is female, ask "*Was this only when you were pregnant?***"]**

READ			
1	Yes	是	**[Go to Q8002]**
2	Yes, but only during pregnancy	是，不过仅在怀孕时	
3	No	否	
4	No, borderline hypertension	否，临界性高血压	
DO NOT READ			**[Go to Q8005]**
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

Interviewer Note: A person with blood pressure ≥140/90mmHg is defined to have high blood pressure or hypertension.

高血压指血压高于 140/90mmHg.

8002. Does your doctor currently give you medicine (e.g. tablets) for your high blood pressure? **[SA]**
医生目前是否有给您治疗高血压的药物？

READ		
1	Yes	有
2	No	没有
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q8003]		

8003. How many times in the past 12 months have you seen a doctor for your high blood pressure? **[SA]**
在过去 12 个月内，您为了治疗高血压看过几次医生？

	Number of times in the past 12 months	在过去12个月内有几次
DO NOT READ		
666	Did not see a doctor for high blood pressure	没有因为高血压看医生
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q8004]		

8004. Where do you seek treatment for your high blood pressure most of the time? **[SA]**
大多数时侯，您是去哪里治疗高血压？

DO NOT READ		
1	Private GP	家庭医生
2	Polyclinic	综合诊所
3	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）
4	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）
5	Others, please specify: 其它，请注明：_____	
666	None, do not seek treatment for high blood pressure	否， 没有为高血压寻求治疗
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q8007]		

8007. At what age were you first diagnosed with high blood pressure? **[SA]**
您是在几岁时被西医诊断为患有高血压的？

	Age	几岁
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q8008]		

8008. What lifestyle or dietary modifications did you make to control your high blood pressure? **[MA]**
您是通过哪些生活或饮食习惯改变来控制您的高血压？

DO NOT READ (May choose more than one answer)		
1	Lose weight	减肥
2	Reduce salt intake	减少盐的摄取量
3	Reduce/ cope with stress	减轻/舒解压力
4	Reduce fat intake	减少脂肪的摄取量
5	Cutting down/ stop smoking	少吸烟/戒烟
6	Exercise	锻炼身体/运动
7	Reduce alcohol intake	少喝酒
8	Others, please specify: 其它，请注明：_____	
666	No lifestyle or dietary modifications	没有改变生活或饮食习惯
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Section 9]		

[If Q8001 = "Yes, but only during pregnancy", "No", "No, borderline hypertension", "Refused" or "Don't know / Not sure"]

8005. When was the last time you had your blood pressure checked? Please exclude checks by yourself. **[SA]**
您最后一次检查血压是什么时候？请不要包括自己做的检查。

READ ONLY IF NECESSARY			
1	1 year ago or less	过去 1 年或少于 1 年	
2	More than 1 year to 2 years	超过 1 年但在 2 年以内	
3	More than 2 years to 3 years	超过 2 年但在 3 年以内	**[Go to Q8006]**
4	More than 3 years to 5 years	超过 3 年但在 5 年以内	
5	More than 5 years ago	超过 5 年前	
6	Never been checked	从未检查过	
DO NOT READ			**[Go to Q8010]**
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

8006. Where did you go for your last blood pressure check-up? **[SA]**
您最后一次检查血压是在哪里进行的？

Interviewer note: If respondent answers "Private GP", probe to check if they are participating in the Screen for Life programme where they pay $0, $2 or $5 for the test.

	DO NOT READ	
1	Private GP (Screen for Life)	家庭医生（"定期体检， 益您一生"）
2	Private GP (Non-Screen for Life)	家庭医生（非"定期体检， 益您一生"）
3	Polyclinic	综合诊所
4	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）
5	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）
6	Workplace	工作场所
7	Community venue	社区场所
8	Overseas clinic/ hospital	国外的诊所或医院
9	Army camp	军队兵营
10	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
	[Go to Q8009]	

8009. Why did you go for your last blood pressure check for blood pressure? **[MA]**
您最后一次检查血压的原因是什么？

	DO NOT READ (May choose more than one answer)	
1	Know the importance of screening	了解检查的重要性
2	Advised by doctors / nurses	医生/护士建议
3	My family members / friends / colleagues encouraged me	家庭成员/朋友/同事的鼓励
4	Read/ heard about it / saw an advertisement about checking for hypertension	读到/听到这项检查/看到检查高血压的广告
9	Received a letter e.g. Screen for Life letter to encourage me to go for screening	收到鼓励我去检查的信件例如"定期体检， 益您一生"的信件
5	Ad-hoc health screening	临时健康检查
6	Routine check-up	定期体检
7	Company / application health screening (e.g. pre-employment or permanent residency application)	公司/申请健康检查（例如入职前或永久居留申请）
8	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
	[Go to Section 9]	

8010.   What are the reasons for not checking your blood pressure? **[MA]**
您从未检查血压的原因有哪些？

	DO NOT READ (May choose more than one answer)	
1	Not necessary as I am healthy	因为我很健康，所以不需要
2	Never heard about it	从未听说过
3	Too old	年纪太大
4	Not at risk	没有危险
5	Cost of the test is too expensive	检查费用太高
6	Afraid of knowing the results	害怕知道检查结果
7	Inconvenient (e.g. clinic/hospital too far away, wait at clinic/hospital too long, English signs at clinic/hospital too confusing)	不方便（例如诊所/医院太远，在诊所/医院等待的时间太长，诊所/医院的英文标示难以理解）
8	Not important	不重要
9	No time due to work/ family commitment (e.g. need to take leave, make alternative arrangement with family members)	由于工作/家庭责任，没时间（例如需要请假、和家庭成员另有安排）
10	Cannot afford cost of treatment for high blood pressure	承担不起治疗高血压的费用
11	Cannot do anything if high blood pressure is detected	即使检查出高血压，也无能为力
12	Too young	年纪太小
13	Fated if I get high blood pressure	如果得了高血压，那是命运的安排
14	Not suggested by doctors	医生没有建议
15	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定

END OF SECTION 8. GO TO SECTION 9.

9. HIGH BLOOD CHOLESTEROL

9000. Have you ever been told by a western-trained doctor that you have high blood cholesterol? **[SA]**
西医是否曾经告诉过您，您患有高胆固醇？

READ			
1	Yes	是	**[Go to Q9001]**
2	No	否	
3	No, borderline high blood cholesterol	否，临界性高胆固醇	
DO NOT READ			**[Go to Q9004]**
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

9001. How many times in the past 12 months have you seen a doctor for your high blood cholesterol? **[SA]**
在过去 12 个月内，您为了治疗高胆固醇看过几次医生？

	Number of times in the past 12 months	在过去12个月内有几次
DO NOT READ		
666	Did not see a doctor for high blood cholesterol	没有因为高胆固醇看医生
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q9002]		

9002. Does your doctor currently give you medicine (e.g. tablets) for your high blood cholesterol? **[SA]**
医生目前是否有给您治疗高胆固醇的药物？

READ		
1	Yes	有
2	No	没有
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q9003]		

9003. Where do you seek treatment for your high blood cholesterol most of the time? **[SA]**
大多数时侯，您是去哪里治疗高胆固醇？

DO NOT READ		
1	Private GP	家庭医生
2	Polyclinic	综合诊所
3	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）
4	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）
5	Others, please specify: 其它，请注明：_____	
666	None, do not seek treatment for high blood cholesterol	否，没有为高胆固醇寻求治疗
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Section 11]		

[If Q9000 = "No", "No, borderline high blood cholesterol", "Refused" or "Don't know / Not sure"]

9004. When was the last time you had your blood cholesterol checked? **[SA]**
您最后一次检查胆固醇是什么时候？

	Interviewer note: Blood tests can be a fasting or non-fasting. **READ ONLY IF NECESSARY**		
1	1 year ago or less	过去 1 年或少于 1 年	**[Go to Q9005]**
2	More than 1 year to 2 years	超过 1 年但在 2 年以内	
3	More than 2 years to 3 years	超过 2 年但在 3 年以内	
4	More than 3 years to 5 years	超过 3 年但在 5 年以内	
5	More than 5 years ago	超过 5 年前	
6	Never been checked	从未检查过	**[Go to Q9007]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

9005. Where did you go for your last blood test to check for cholesterol? **[SA]**
您最后一次检查胆固醇是在哪里进行的？

Interviewer note: *If respondent answers "Private GP", probe to check if they are participating in the Screen for Life programme where they pay $0, $2 or $5 for the test.*

	DO NOT READ	
1	Private GP (Screen for Life)	家庭医生（"定期体检，益您一生"）
2	Private GP (Non-Screen for Life)	家庭医生（非"定期体检，益您一生"）
3	Polyclinic	综合诊所
4	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）
5	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）
6	Workplace	工作场所
7	Community venue	社区场所
8	Overseas clinic/ hospital	国外的诊所或医院
9	Army camp	军队兵营
10	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
	[Go to Q9006]	

9006. Why did you go for your last blood test to check for cholesterol? **[MA]**
您最后一次检查胆固醇的原因是什么？

	DO NOT READ (May choose more than one answer)	
1	Know the importance of screening	了解检查的重要性
2	Advised by doctors / nurses	医生/护士建议
3	My family members / friends / colleagues encouraged me	家庭成员/朋友/同事的鼓励
4	Read/ heard about it / saw an advertisement about checking for cholesterol	读到/听到这项检查/看到检查胆固醇的广告
9	Received a letter e.g. Screen for Life letter to encourage me to go for screening	收到鼓励我去检查的信件例如"定期体检，益您一生"的信件
5	Ad-hoc health screening	临时健康检查
6	Routine check-up	定期体检
7	Company / application health screening (e.g. pre-employment or permanent residency application)	公司/申请健康检查（例如入职前或永久居留申请）
8	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
	[Go to Section 11]	

[If Q9004 = "Never been checked", "Refused" or "Don't know / Not sure"]

9007. What are your reasons for not having your blood cholesterol checked? **[MA]**

您从未检查胆固醇的原因有哪些？

DO NOT READ (May choose more than one answer)		
1	Not necessary as I am healthy	因为我很健康，所以不需要
2	Never heard about it	从未听说过
3	Too old	年纪太大
4	Not at risk	没有危险
5	Cost of the test is too expensive	检查费用太高
6	Afraid of knowing the results	害怕知道检查结果
7	Inconvenient (e.g. clinic/hospital too far away, wait at clinic/hospital too long, English signs at clinic/hospital too confusing)	不方便（例如诊所/医院太远，在诊所/医院等待的时间太长，诊所/医院的英文标示难以理解）
8	Not important	不重要
9	No time due to work/ family commitment (e.g. need to take leave, make alternative arrangement with family members)	由于工作/家庭责任，没时间（例如需要请假、和家庭成员另有安排）
10	Cannot afford cost of treatment for high blood cholesterol	承担不起治疗高血胆固醇的费用
11	Cannot do anything if high blood cholesterol is detected	即使检查出有高胆固醇，也无能为力
12	Too young	年纪太小
13	Fated if I get high blood cholesterol	如果得了高血胆固醇，那是命运的安排
14	Not suggested by doctors	医生没有建议
15	Don't know where to go	不知道去哪里检查
16	Painful test	检查太痛苦
17	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定

END OF SECTION 9. GO TO SECTION 11.

> **IF respondent is <u>male & below 50 years of age</u>, go to Q11023.**
>
> **IF respondent is <u>male & aged 50 and above</u>, go to Q11016.**
>
> **IF respondent is <u>female & below 50 years of age</u>, go to Q11000.**
>
> **IF respondent is <u>female & aged 50 and above</u>, go to Q11002.**

11000. **[For women below 50 years of age]** To your knowledge, are you pregnant now? **[SA]**
据您所知，您目前是否怀孕？

READ		
1	Yes	是
2	No	否
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q11002]		

11002. **[For all women only]** When was the last time you had a test to scrap cells from the mouth of the womb to check for cervical cancer? **[SA]**
您最后一次接受针对子宫颈癌的子宫口细胞检查是多久以前的事？

READ ONLY IF NECESSARY			
1	1 year ago or less	过去 1 年或少于 1 年	[Go to Q11003]
2	More than 1 year to 2 years	超过 1 年但在 2 年以内	
3	More than 2 years to 3 years	超过 2 年但在 3 年以内	
4	More than 3 years to 4 years	超过 3 年但在 4 年以内	
5	More than 4 years to 5 years	超过 4 年但在 5 年以内	
6	More than 5 years ago	超过 5 年前	
7	Never been checked	从未检查过	**[Go to Q11010 if <u>aged 40 and above</u>]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q11023 if <u>aged below 40</u>]**
888	Don't know / Not sure	不知道／不肯定	

11003. **[For all women only]** Where did you go for your last test to check for cervical cancer? **[SA]**

您最后一次在哪里进行针对子宫颈癌的子宫口细胞检查？

Interviewer note: If respondent answers "Private GP", probe to check if they are participating in the Screen for Life programme where they pay $0, $2 or $5 for the test.

DO NOT READ		
1	Private GP (Screen for Life)	家庭医生（"定期体检，益您一生"）
2	Private GP (Non-Screen for Life)	家庭医生（非"定期体检，益您一生"）
3	Polyclinic	综合诊所
4	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）
5	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）
10	Specialist outpatient clinic (not in hospital)	专科门诊诊所（不在医院经营）
6	Workplace	工作场所
7	Community venue	社区场所
8	Overseas clinic/ hospital	国外的诊所或医院
9	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q11025]		

11025. **[For all women only]** Which of the following test have you taken for your last check for cervical cancer**? [SA]**

您在最后一次检查子宫颈癌时接受了以下哪一种子宫口细胞检查？

USE SHOWCARD		
1	Pap smear	宫颈抹片检查
2	Human Papillomavirus (HPV)	人乳头瘤病毒检查
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q11010 if <u>aged 40 and above</u>]		
[Go to Q11023 if <u>aged below 40</u>]		

11010. **[Only for Women aged 40 years and older]** A mammogram is an x-ray of each breast to look out for breast cancer. When was the last time you had a mammogram? **[SA]**

乳房 X 光检查是一种利用 X 光检查乳癌的方法。您最后一次接受乳房 X 光检查是多久以前的事？

	READ ONLY IF NECESSARY		
1	1 year ago or less	过去 1 年或少于 1 年	**[Go to Q11013]**
2	More than 1 year to 2 years	超过 1 年但在 2 年以内	
3	More than 2 years to 3 years	超过 2 年但在 3 年以内	
4	More than 3 years to 4 years	超过 3 年但在 4 年以内	
5	More than 4 years to 5 years	超过 4 年但在 5 年以内	
6	More than 5 years ago	超过 5 年前	
7	Never been checked	从未检查过	**[Go to Q11016 if aged 50 and above]** **[Go to Q11023 if aged below 50]**
	DO NOT READ		
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

11013. **[Only for Women aged 40 years and older]** Where did you go for your last mammogram? **[SA]**

您最后一次的乳房 X 光检查是在哪里进行的？

	DO NOT READ	
1	Polyclinic	综合诊所
2	Public hospital	公共医院
3	Private hospital	私人医院
4	Private X-ray centre	私人 X 光检查中心
5	Mammobus	乳房 X 光检查流动巴士
6	Workplace	工作场所
7	Community venue	社区场所
8	Overseas clinic/ hospital	国外的诊所或医院
9	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q11016 if aged 50 and above] **[Go to Q11023 if aged below 50]**		

[For Male & Female respondents aged 50 years and above only]

11016. A blood stool test is a test to determine whether the stool contains blood, which can be caused by conditions such as piles or colorectal cancer. When was the last time you had a blood stool test? **[SA]**

便血检查能检测粪便中是否含有血液，这可能是由于痔疮或者结直肠癌等病症引起的。您最后一次进行便血检查是多久以前的事？

Interviewer note: A blood stool test can be also known as a faecal occult blood test (FOBT) or faecal immunochemical blood test (FIT).

	READ ONLY IF NECESSARY		
1	1 year ago or less	过去 1 年或少于 1 年	
2	More than 1 year to 2 years	超过 1 年但在 2 年以内	
3	More than 2 years to 3 years	超过 2 年但在 3 年以内	**[Go to Q11018]**
4	More than 3 years to 5 years	超过 3 年但在 5 年以内	
5	More than 5 years ago	超过 5 年前	
6	Never been checked	从未检查过	
	DO NOT READ		**[Go to Q11020]**
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

[For Male & Female respondents aged 50 years and above only]

11018. Where did you go for your last blood stool test? **[SA]**

您最后一次的便血检查是在哪里进行的？

Interviewer note: If respondent answers "Private GP", probe to check if they are participating in the Screen for Life programme where they pay $0, $2 or $5 for the test.

	DO NOT READ	
1	Private GP (Screen for Life)	家庭医生（"定期体检， 益您一生"）
2	Private GP (Non-Screen for Life)	家庭医生（非"定期体检， 益您一生"）
3	Polyclinic	综合诊所
4	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）
5	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）
6	Workplace	工作场所
7	Community venue	社区场所
8	Overseas clinic/ hospital	国外的诊所或医院
10	Collection of Faecal Immunochemical Test (FIT) kit (e.g. from phamarcies such as Watson, Guardian, Singapore Cancer Society)	粪便免疫化学测验器 （例如屈臣氏（Watson's），佳宁药房（Guardian），新加坡癌症协会）
9	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
	[Go to Q11020]	

[For Male & Female respondents aged 50 years and above only]

11020. Colonoscopy is a procedure where a flexible tube is inserted through the rectum and into the large intestines. A small camera allows the doctor to examine the intestinal wall for abnormalities such as cancer. When was the last time you had a colonoscopy? **[SA]**
结肠镜检查是一种将软管插入直肠然后进入大肠的检查方法。软管前端会有一个小型摄像头，让医生可以检查肠壁是否有异常，例如癌症。您最后一次接受结肠镜检查是多久以前的事？

Interviewer note*: Before taking a colonoscopy, patients are required to drink a cleansing liquid and be on a clear liquid diet at least one day before the test so that a clear view of their bowel can be taken.*

READ ONLY IF NECESSARY		
1	1 year ago or less	过去 1 年或少于 1 年
2	More than 1 year to 2 years	超过 1 年但在 2 年以内
3	More than 2 years to 3 years	超过 2 年但在 3 年以内
4	More than 3 years to 5 years	超过 3 年但在 5 年以内
5	More than 5 years to 10 years	超过 5 年但在 10 年以内
6	More than 10 years ago	超过 10 年前
7	Never been checked	从未检查过
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q11023]		

[For all Male & Female respondents]

11023. In the past 12 months, have you had an injection to protect you from getting flu? **[SA]**
在过去 12 个月内, 您有没有接受流行性感冒的免疫注射？

READ		
1	Yes	有
2	No	没有
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q11024]		

[For all Male & Female respondents]

11024. Have you ever had pneumococcal vaccination before? **This vaccine protects against a bacterial infection that causes pneumonia, blood infection and inflammation of the brain (meningitis). [SA]**
您是否曾有接种肺炎球菌疫苗？**这种疫苗可预防能引起肺炎、血液感染和脑炎(脑膜炎)的细菌感染。**

READ		
1	Yes	有
2	No	没有
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定

END OF SECTION 11. GO TO SECTION 12.

12006. Do you have a <u>regular*</u> family doctor (i.e. a General Practitioner (GP) or Polyclinic) whom you consult when you have common illnesses such as cough and cold? **[SA]**

您在患上咳嗽或感冒等普通疾病的时候，您是否会去看<u>固定*</u>的家庭医生，或者前往同一间综合诊疗所看病？

READ ONLY IF NECESSARY			
1	Yes, I have a regular family doctor in a private General Practitioner (GP) clinic whom I consult on common illnesses	有，我有固定的家庭医生看病	**[Go to Q12007]**
2	Yes, I visit the same Polyclinic to consult a doctor on common illnesses	有，我会探访同一所综合诊疗所看病	
3	No, I do not have a regular family doctor whom I consult on common illnesses	没有，我在患上普通疾病的时候我没有固定家庭医生	**[Go to Q12008]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

A regular family doctor is defined as a primary care physician/ Polyclinic who you turn to frequently or habitually for healthcare advice/consultation.

12007. What are the reasons you choose him/ her as your regular family doctor or visit the same polyclinic for your common illnesses? **[MA]**

您选择他/她作为您固定的家庭医生或者前往同一间综合诊疗所看病的原因是什么？

***Interviewer note**: If respondent answers "convenient location", probe if it is convenient to home or workplace.*

READ ONLY IF NECESSARY		
1	Professionally competent doctor / good doctor	医生的专业水平/医术高
2	Cheaper charges	医疗费用比较便宜
3	Convenient location, nearer to my home	地点方便，靠近住家
4	Convenient location, nearer to my workplace	地点方便，靠近工作地点
5	Have been seeing this doctor since young / for many years	从小就看这位医生/看这位医生很多年了
7	Part of company's panel of doctors	是公司指定的医生团队
6	Others, please specify: 其它，请注明：_____	
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q12008]		

12008. Do you have a regular* family doctor (i.e. a General Practitioner (GP) or Polyclinic) whom you will consult on your chronic conditions^ (e.g diabetes, hypertension, high blood cholesterol, asthma)? **[SA]**

您在患上慢性疾病ˆ（糖尿病、高血压、高胆固醇、哮喘）的时候，您是否会去看固定*的家庭医生，或者前往同一间综合诊疗所看病？

	READ ONLY IF NECESSARY		
1	Yes, I have a regular family doctor in a private General Practitioner (GP) clinic whom I consult on my chronic conditions	有，我有固定的家庭医生看病	**[Go to Q12009]**
2	Yes, I visit the same Polyclinic to consult a doctor on my chronic conditions	有，我会探访同一所综合诊疗所看病	
3	No, I do not have a regular family doctor whom I consult on my chronic conditions	没有，我在患上慢性疾病的时候没有固定家庭医生去看病	**[Go to Q12002]**
4	I do not have any chronic conditions	我没有任何慢性疾病	**[Go to Section 13]**
	DO NOT READ		
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

A regular family doctor is defined as a primary care physician/ Polyclinic who you turn to frequently or habitually for healthcare advice/consultation.

^ Chronic conditions refer to long-term medical conditions that require regular management (e.g. diabetes, hypertension, high blood cholesterol, asthma)

12009. What are the reasons you choose him/ her as your regular family doctor or visit the same polyclinic for your chronic conditions? **[MA]**

您选择他/她作为您固定的家庭医生或者前往同一间综合诊疗所看病的原因是什么？

Interviewer note: *If respondent answers "convenient", probe if it is convenient to home or workplace.*

	READ ONLY IF NECESSARY	
1	Professionally competent doctor / good doctor	医生的专业水平/医术高
2	Cheaper charges	医疗费用比较便宜
3	Convenient location, nearer to my home	地点方便，靠近住家
4	Convenient location, nearer to my workplace	地点方便，靠近工作地点
5	Have been seeing this doctor since young / for many years	从小就看这位医生/看这位医生很多年了
7	Part of company's panel of doctors	是公司指定的医生团队
6	Others, please specify: 其它，请注明：＿＿＿＿＿＿＿＿＿＿＿	
	DO NOT READ	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定

[If Q12006="No, I do not have a regular family doctor whom I consult on common illnesses" or Q12008="No, I do not have a regular family doctor whom I consult on my chronic conditions"]

12002. What are the reasons that you do not have a <u>regular</u> family doctor? **[MA]**
您没有<u>固定</u>的家庭医生或综合诊疗所的原因有哪些？

READ ONLY IF NECESSARY		
1	I see different doctors depending on convenience – whichever doctor is on duty near wherever I am	我会为了方便而选择看任何在值班的医生
3	I see different doctors because I compare the cost of visiting the different doctors	我会比较医疗费用而选择看不同的医生
4	I don't see the value / need to have a regular family doctor	我不认为有需要看固定的家庭医生
5	Others, please specify: 其它，请注明: _____	
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定

END OF SECTION 12. GO TO SECTION 13.

13. HEALTH STATE DESCRIPTIONS

13005. In general, how would you rate your health today? **[SA]**
总的来说，您觉得您现在的健康状况如何？

READ AND USE SHOWCARD		
1	Very Good	很好
2	Good	好
3	Moderate	一般
4	Bad	不好
5	Very Bad	很差
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q13006]		

> **Interviewer:** Next, I would like to ask you some questions about your sleeping habits.
> 接下来我想问关于您的睡眠习惯。

13006. How many hours do you usually sleep per day on <u>weekdays</u>? **[SA]**
您通常在<u>周日</u>有几个小时的睡眠？

Interviewer note: Please exclude nap time and record number of hours of sleep to the nearest 0.5 hours e.g. 8 hours 30 minutes per weekday is 8.5 hours per weekday.

	Hours per day on weekdays	每个周日几小时
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q13007]		

13007. How many hours do you usually sleep per day on <u>weekends</u>? **[SA]**
您通常在<u>周末</u>有几个小时的睡眠？

Interviewer note: Please exclude nap time and record number of hours of sleep to the nearest 0.5 hours e.g. 8 hours 30 minutes per weekend is 8.5 hours per weekend.

	Hours per day on weekends	每个周末日几小时
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q13002]		

13002. If you feel like you are constantly unable to cope with stress, would you be willing to seek help from a…? **[SA]**
若您觉得经常无法应付/面对压力时，您是否愿意向以下人士求助？

READ			
	1) Yes 是	2) No 否	777) Refused 拒绝回答
a. Healthcare professional, for example a counsellor, doctor, psychologist or psychiatrist? 医疗专业人士例如辅导员、医生、精神病医生、心理学家？	☐	☐	☐
b. Friend, relative, colleague, religious leader or teacher in school? 朋友、亲戚、同事、宗教领袖、学校的老师？	☐	☐	☐
[Go to Q13101]			

Interviewer: Next, I would like to ask how you have been feeling, thinking and behaving over the last 2 weeks.

For each sentence, tell me which number on the scale ranging from 1: Strongly Disagree to 9: Strongly Agree best corresponds to how well each sentence describes you over the last 2 weeks.

接下来，我想问关于您在前两周内的心情、思想及行为。请仔细阅读以下句子。

请您在每个句子旁的比例表（从 1：强烈不同意至 9：强烈同意）选择最代表您在前两周内的心情、思想及行为。

READ AND USE SHOWCARD								
1 Strongly Disagree 强烈不同意	2	3	4 Mildly Disagree 稍微不同意	5 Neither Agree Nor Disagree 不同意也不反对	6 Mildly Agree 稍微同意	7	8	9 Strongly Agree 强烈同意

		Score [1 to 9]
13101a.	I am optimistic about the future. 我对未来感到乐观。	
13101b.	I am spiritual. 我的心灵感到满足。	
13101c.	I am able to accept myself. 我能够接受自己。	
13101d.	I am able to accept reality. 我能够接受现实。	
13101e.	I am able to cope with life's challenges. 我能够应付生活的挑战。	
13101f.	I am calm. 我感到镇定。	
13101g.	I am not depressed. 我不会感到忧郁。	
13101h.	I am able to make friends. 我能够交朋友。	
13101i.	I have the strong support of my family and friends. 我有朋友与家人的支持及鼓励。	
13101j.	I seek for self-development/growth/cultivation. 我寻求自我提升/成长/修炼。	
13101k.	I am able to offer help to others. 我能够帮助其他人。	
13101l.	I am appreciative of life. 我对生活具有欣赏力。	
13101m.	I appreciate my own self-worth. 我赏识我的自我价值。	
13101n.	I am happy. 我感到开心。	
13101o.	I am able to think clearly. 我能够清楚地思考。	
13101p.	I am able to make good decisions. 我能够做好的决定。	

END OF SECTION 13. GO TO SECTION 14.

14. DENTAL HEALTH

Interviewer: Now, I would like to ask you some questions about your dental health.
现在，我想问您关于口腔健康的问题。

14000. How often do you visit a dentist? **[SA]**
您多久看一次牙医？

	READ ONLY IF NECESSARY		
1	Once every 6 months	每 6 个月一次	
2	At least once a year	至少一年一次	
3	At least once every 2 years	至少每两年一次	**[Go to Q14001]**
4	Only if there is pain or when I have a dental problem	只有在有牙疼或有口腔问题的时候	
5	Others, please specify: 其它，请注明：＿＿＿＿＿＿＿＿		
	DO NOT READ		
666	Have never been to a dentist	从未看过牙医	
777	Refused	拒绝回答	**[Go to Section 15]**
888	Don't know / Not sure	不知道／不肯定	

14001. When was the last time you visited a dentist? **[SA]**
您最后一次看牙医是什么时候？

	READ ONLY IF NECESSARY	
1	Less than 6 months ago	过去 6 个月内
2	6-12 months ago	6 到 12 个月内
3	More than a year, but less than 2 years ago	超过 1 年，但少过 2 年内
4	2 years or more, but less than 5 years ago	2 年及以上，但少过 5 年内
5	At least 5 years ago	至少 5 年以前
	DO NOT READ	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定

END OF SECTION 14. GO TO SECTION 15.

15. ADDITIONAL DIABETES QUESTIONS

15000. Do you think diabetes is preventable? **[SA]**
您觉得糖尿病是否可以预防吗？

READ		
1	Yes	是
2	No	否
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q15001]		

15001. To your knowledge, what are some ways to prevent diabetes? **[MA]**
据您所识，有哪些方法可以预防糖尿病呢？

<write response 写回应>

DO NOT READ (for internal coding only)		
1	Exercise regularly	经常运动
2	Exercise for at least 150 minutes per week	每周运动至少 150 分钟
3	Go for regular health screening	定期体检
4	Go for blood sugar / blood glucose screening / testing	检查血糖/血糖检验/测试
5	Eat a balanced diet	注意饮食平衡
6	Eat more fruits and/or vegetables	多吃水果和/或蔬菜
7	Eat wholegrains / brown rice	吃全谷物/糙米
8	Eat less sweetened food	少吃甜食
9	Eat less carbohydrate rich food (e.g. rice/ bread/ noodle)	少吃碳水化合物（比如米饭/面包/面条）
10	Eat lower calorie meals / foods	吃低卡路里的食物
11	Limit processed foods	减少工业加工的食品
12	Have "siu dai" / lower sugar beverage	喝少糖的饮品
13	Do not smoke / quit smoking	不吸烟/戒烟
14	Control your blood pressure	控制血压
15	Manage / Lose weight	控制体重/减肥
16	Manage stress	调节压力
17	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q15004]		

15004. Diabetes can lead to some health conditions. What are some of these conditions? **[MA]**
糖尿病能够引起一些其它病症。下面哪些病症可能由糖尿病引发呢？

READ (May choose more than one answer)		
1	Kidney Disease	肾病
2	Stroke	中风
3	Heart Disease / Heart Attack	心脏病/心脏病发作
4	Foot Amputation	截肢
5	Blindness	眼盲
6	Cancer	癌症
7	Others, please specify: 其它，请注明：_____	
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定

END OF SECTION 15. GO TO SECTION 16.

16. BREASTFEEDING (FOR WOMEN WITH CHILDREN BELOW 7 YEARS OLD ONLY)

16000. Did you breastfeed your youngest child? **[SA]**
您是否有母乳喂养您最年幼的孩子？

READ			
1	Yes	有	**[Go to Q16001]**
2	No	没有	**[Go to 16002]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道／不肯定	

16001. How old was your youngest child when you stopped breastfeeding him/her completely? **[SA]** Please include the period when you exclusively breastfeed.
您在您最年幼的孩子几岁时完全停止喂养母乳？请包括您只用母乳喂养的时期。

Interviewer note: *If respondent mentions in years <u>AND</u> months, for example 2 year and 4 months, record as 28 months.*

	Days, **OR**	天，或
	Months, **OR**	月，或
	Years	年
DO NOT READ		
666	Currently still breastfeeding. Please specify age of the youngest child: _____ days, **OR** _____ months, **OR** _____ years	
777	Refused	
888	Don't know / Not sure	
[Go to Q16004]		

16004. How long did you feed your youngest child **only** breast milk (without water or formula milk)? [SA]
您给最年幼的孩子只喂养食母乳的时期有多久（不喂水或配方牛奶）？

	Days, **OR**	天，或
	Months, **OR**	月，或
	Years	年
DO NOT READ		
666	Currently still exclusively breastfeeding. Please specify age of the youngest child: _____ days, **OR** _____ months	
777	Refused	
888	Don't know / Not sure	
[Go to Q16002]		

16002. How old was your youngest child when he/she was first fed formula milk? **[SA]**
请问您最年幼的孩子第一次喝配方奶粉时是几岁？

	Days, **OR**	天，或
	Months, **OR**	月，或
	Years	年
DO NOT READ		
666	Have not started on formula milk	未开始喝配方奶粉
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
[Go to Q16003]		

16003. How old was your youngest child when he/she was first fed baby foods such as purees, rice cereals and solid food? **[SA]**
请问您最年幼的孩子第一次吃婴儿食品时（例如泥状食物、米谷物及固体食物）是几岁？

READ ONLY IF NECESSARY		
1	0 to below 4 months old	4 个月以下
2	4 to below 6 months old	4 到 6 个月以下
3	6 to below 9 months old	6 到 9 个月以下
4	9 months old and above	9 个月及以上
DO NOT READ		
666	Have not started on baby foods	未开始吃婴儿食品
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定

END OF SECTION 16. GO TO SECTION 22.

22. HYGIENE PRACTICES AND USE OF ANTIBIOTICS

22000. I am now going to read out some practices that will prevent the spread of infectious diseases like common cold or influenza that are caused by germs such as viruses. For the prevention of infectious diseases, do you <u>usually</u> …? **[MA]**

我现在将读出一些防止由病毒所引起的传染病，例如普通感冒或流感的传播的预防措施。 为了预防传染病，您通常是否会 …?

	USE SHOWCARD (You may choose more than one answer)	
1	wash your hands regularly with soap and water or use a hand sanitiser	定期用肥皂和水洗手或使用消毒洗手液
2	cover your nose and mouth when coughing or sneezing	在咳嗽或打喷嚏时掩住鼻子和嘴巴
3	stay at home if you feel unwell	在感到不适的时候待在家里
4	use a surgical mask when you are unwell ***Interviewer note***: Exclude reusable mask	在身体不适的时候使用手术型口罩
5	go see a doctor if you feel unwell	在感到不适的时候去看医生
6	go for yearly flu vaccination ***Interviewer note***: Flu vaccination refers to an injection to protect you from getting the flu	接受年度流感疫苗接种
7	Others, please specify: 其它，请注明：_____	
	DO NOT READ	
666	No, I do not have these habits	不，我没有这些习惯
777	Refused	拒绝回答
888	Don't know / Not sure	不知道／不肯定
	[Go to Q22001]	

22001. I am now going to read out some statements on the use of antibiotics. Do you agree that…? **[SA]**

我现在将读出几个有关服用抗生素的句子，请告诉我您觉得每一项的答案是对或错。

USE SHOWCARD				
			DO NOT READ	
Statement	1) Yes 对	2) No 错	777) Refused 拒绝回答	888) Don't know / Not sure 不知道 / 不肯定
(a) Antibiotics do not work on flu virus 抗生素对流感病毒无效				
(b) Antibiotics will lose its effectiveness in the long term if one takes antibiotics for common cold and flu, does not complete the full course of antibiotics or take leftover antibiotics 如果因为普通感冒和流感而服用抗生素，或者未完成整个抗生素疗程，或者服用剩余的抗生素，长期以来, 抗生素将失去效力				
(c) You should ask the doctor for antibiotics if not prescribed 如果医生未开抗生素处方，您应该向医生要求抗生素				

END OF SURVEY.

Annex B

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