Report on the Telephone Opinion Survey on General Public's Knowledge, Attitude and Practice on Antibiotic Resistance 2024

Submitted to

Infection Control Branch
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Submitted by

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Table of Content

Executive Summary

1. This survey, conducted by the Hong Kong Institute of Asia-Pacific Studies, Chinese University of Hong Kong, was commissioned by the Infection Control Branch of the Centre for Health Protection of the Department of Health, to explore the knowledge, attitude and practice of the general public with respect to antibiotics and their awareness of antibiotic resistance.

2. The target population of this survey were non-institutional Hong Kong residents aged 15 or above who could speak Cantonese, Putonghua or English (excluding foreign domestic helpers). This survey was conducted by means of landline and mobile telephone interviews via random sampling from 25 November 2024 to 17 December 2024. A sample size of 1,080 successful interviews (446 from landline numbers and 634 from mobile numbers) was achieved with a combined response rate of 55.7%.

3. To make the findings more representative of the Hong Kong general population, the data of this survey was weighted before analysis based on the probability of being sampled in the combined landline frame and mobile phone frame, and the relevant age-gender distribution of the population (aged 15 or above excluding foreign domestic helpers) provided by the Census and Statistics Department.

Key Findings of the 2024 Survey

4. In the 2024 survey, over one-third (36.0%) of all respondents last took antibiotics within the past year. The majority (96.3%) of those who had ever taken antibiotics reported that their last taken antibiotics were prescribed by doctors, and 56.6% of this subgroup obtained their antibiotics from private clinics. For those whose last taken antibiotics were not or could not remember if prescribed by doctors, the major source of antibiotics

was medical store or pharmacy (55.1%).

5.   A fifth (20.4%) of respondents whose antibiotics last taken were prescribed by doctors reported that they had noticed the health advice on antibiotics medicine bags. Among them, 82.0% considered the advice helpful in reminding them to be aware of and maintain personal hygiene.

6.   Of those whose antibiotics last taken were prescribed by doctors, the proportion of always or seldom practising the following health advice when handling or taking antibiotics in daily life during the last medication period are listed below:

      a.   Eat or drink only thoroughly cooked or boiled items: 97.6% (always: 91.4%; seldom: 6.1%);

      b.   Wear surgical mask if you have respiratory symptoms: 95.1% (always 74.5%; seldom: 20.6%);

      c.   Disinfect and cover all wounds: 91.8% (always 63.7%; seldom: 28.1%);

      d.   Young children with symptoms of infections should minimise contact with other children: 91.3% (always: 76.9%; seldom: 14.4%), and;

      e.   Practise frequent hand hygiene: 85.2% (always 59.5%; seldom: 25.6%).

7.   A majority (93.3%) of respondents whose antibiotics last taken were prescribed by doctors completed the whole course of treatment as instructed by doctor. For those who did not complete the whole course of treatment as instructed by doctor, improvement of symptoms (56.2%) was the most common reason.

8. Of those who had been to pharmacies and remembered whether they had noticed the notices "Do not purchase antibiotics without a prescription", only a small proportion (13.5%) had noticed the notice (noticed and were reminded: 10.2%; noticed but were not reminded: 3.3%) while majority (86.5%) said they had not.

9. In the past 12 months before enumeration, nearly half (45.9%) of the respondents had consulted doctor(s) for cold or flu. Among them, 95.0% did not request antibiotics during that consultation.

10. When doctor's initial assessment indicated that antibiotic was not needed at the moment, the majority (93.9%) of all respondents would accept doctor's advice to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics or not. Half (50.4%) of all respondents wanted their doctors to share the decision making with them on antibiotics prescription. A majority (84.6%) of the respondents did not prefer consulting doctors who prescribed antibiotics more readily.

11. The percentages of respondents who correctly identified which health conditions need to use antibiotics are listed below:

    a. Headaches (No: 92.7%);

    b. Body aches (No: 89.0%);

    c. Cold and flu (No: 82.0%);

    d. Bladder infection or urinary tract infection (UTI) (Yes: 54.8%); and

    e. Skin or wound infection (Yes: 48.6%).

Respondents aged 65 or above were less likely to give correct answers to skin or wound

infection and headaches, while those aged between 45 and 54 were less likely to give correct answer to UTI.

12.   The percentages of respondents who had heard of the following terms (in the language used during enumeration, i.e. Chinese or English) are listed below:

      a.   "Antibiotic resistance" (抗生素耐藥性) (70.9%);

      b.   "Drug-resistant bacteria" (耐藥性細菌) (70.4%); and

      c.   "Antimicrobial resistance" (抗菌素耐藥性) (23.9%).

13.   The percentages of all respondents who correctly identified the statements about antibiotic resistance as true or false are listed below:

      a.   I myself or other can use the antibiotics kept for treating illness next time (False: 90.8%);

      b.   Using separate utensils to handle cooked or ready-to-eat foods and raw foods can prevent cross-contamination of drug-resistant bacteria (True: 89.6%);

      c.   Some infections are becoming increasingly resistant to treatment by antibiotics (True: 83.1%);

      d.   If high-risk individuals (including pregnant women, young children, elderly and people with weakened immune systems) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced (True: 78.2%);

      e.   If people taking medicines such as antibiotic and stomach medicines (antacids) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced (True: 76.7%);

f. Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria (True: 74.4%);

g. Thorough cooking is effective to kill drug-resistant bacteria in food (True: 73.8%);

h. If bacteria are resistant to antibiotics, it can be very difficult or impossible to treat the infections they cause (True: 67.7%);

i. Antibiotics are anti-inflammatory drugs (False: 65.8%); and

j. Bacteria which are resistant to antibiotics can be spread from person to person (True: 42.2%).

Those aged 55 to 64 and those aged 65 or above were the two age groups that were less likely to correctly indicate whether the selected statements were true or false. Both age groups had the lowest percentage of correct answers to 4 statements each.

Trend Analysis

14. The findings of this survey were compared to those of the 2023 and 2022 surveys respectively. Key questions with statistically significant differences in percentage distribution at 5% level compared to 2022 are as follows:

● Among the respondents whose antibiotics last taken were prescribed by doctors, the proportion who always/seldom wore surgical masks while having respiratory symptoms during their last medication period increased from 87.5% in 2022 to 95.1% in 2024.

● Nearly half (45.9%) of all respondents had consulted doctors for cold or flu in the past 12 months, increased from 21.6% in 2022.

● When doctor's initial assessment indicated that antibiotic was not needed at the moment, the proportion of respondents who would accept doctor's advice to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe

antibiotics (93.9%) remained a significantly high level compared to 2022 (96.4%).

- The proportion of respondents who wanted doctors to share decision making with them on antibiotics prescription decreased from 66.3% in 2022 to 50.4% in 2024.

- The question on whether selected health conditions could be treated with antibiotics in the 2022 survey changed slightly in 2023 and 2024 to whether the respondents thought the selected health conditions needed to use antibiotics. The percentages of correct answers to cold and flu, body aches and headaches increased from 49.7%, 78.0% and 79.5% in 2022 to 82.0%, 89.0% and 92.7% in 2024 respectively, while the percentages of correct answers to bladder infection or urinary tract infection (UTI) and skin or wound infection decreased from 59.4% and 75.7% in 2022 to 54.8% and 48.6% in 2024 respectively.

- The proportion of respondents who had heard of "Antibiotic resistance" and "Antimicrobial resistance" dropped respectively from 76.0% and 40.3% in 2022 to 70.9% and 23.9% in 2024.

15. Key questions with statistically significant differences in percentage distribution at 5% level compared to 2023 are as follows:

- For those whose last taken antibiotics were prescribed by doctors, the percentage who obtained the last taken antibiotics from a private clinic decreased from 62.2% in 2023 to 56.6% in 2024.

- The proportion of always/seldom eating and drinking only thoroughly cooked or boiled items during the last medication period increased from 96.5% in 2023 to 97.6% in 2024.

- The proportion of correct answers to the following statements increased from 2023 to 2024:

     a. Some infections are becoming increasingly resistant to treatment by antibiotics (79.6% in 2023; 83.1% in 2024);

b. If high-risk individuals (including pregnant women, young children, elderly and people with weakened immune systems) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced (73.7% in 2023; 78.2% in 2024); and

c. If people taking medicines such as antibiotic and stomach medicines (antacids) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced (71.2% in 2023; 76.7% in 2024).

16. The comparative analysis of those aged 65 or above indicated a significant increase in the percentage of correct answer among the elderly respondents to the statement "If people taking medicines such as antibiotic and stomach medicines (antacids) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced" from 61.5% in 2023 to 72.1% in 2024.

Recommendations

17. Only about half of the respondents correctly answered that bladder infection or urinary tract infection (UTI), and skin or wound infection need to use antibiotics. Public health education needs to focus on identifying whether common health conditions need to be treated with antibiotics.

18. Only around two-fifths of the respondents knew that bacteria resistant to antibiotics could be spread from person to person. Health promotion should reinforce the idea that drug-resistant bacteria can spread as easily as other bacteria from person to person, and that proper infection measures can prevent its spread.

19. Of those who had been to pharmacies and remembered whether they had noticed the

notice about "Do not purchase antibiotics without a prescription" posted at community pharmacies, over four-fifths reported that they had not noticed the notices. In addition, only a fifth of the respondents whose last taken antibiotics were prescribed by doctors noticed the health advice on antibiotics medicine bags. This reflects that these measures may not be reaching its target audience effectively, and may need to be strengthened.

20. Although comparative analysis of the 65 or above age group showed improvement in some aspects of knowledge this year, knowledge deficit was still present in both the 55 to 64 and the 65 or above age groups. Measures should be taken to targeted health promotion activities towards these age groups.

21. Compared to the 2023 survey, there were improvements in the percentage of respondents having heard of the terms "Antibiotic Resistance" (抗生素耐藥性) (from 66.7% to 70.9%), "Drug-resistant bacteria" (耐藥性細菌) (from 66.6% to 70.4%), and "Antimicrobial Resistance" (抗菌素耐藥性) (from 22.6% to 23.9%). To further enhance the public's knowledge and awareness of antimicrobial resistance, more intensive health education and promotion activities should be conducted through easy-to-understand and impactful media channels.

22. This survey also revealed that only half of the respondents wanted their doctors to share decision making with them on antibiotics prescription, but the majority would accept doctor's advice to observe for a few more days before deciding whether to prescribe antibiotics when the initial assessment indicated that antibiotics were not needed. Given their role in continuity of care, primary care doctors are in the best position to minimize the spread of antibiotic resistance by practising antibiotic stewardship and educating patients about the importance of using antibiotics safely and appropriately.

1. Introduction

1.1 Background

Antibiotic resistance is a burning public health issue. The World Health Organization ("WHO") and WHO Regional Office for the Western Pacific issued the Global Action Plan on Antimicrobial Resistance ("AMR") and Action Agenda for AMR in the Western Pacific Region in 2015 respectively. Recognising the threat posed by AMR to public health, the Hong Kong Special Administrative Region Government announced in the 2016 Policy Address to set up a High-Level Steering Committee on Antimicrobial Resistance ("HLSC") to formulate strategies in collaboration with relevant sectors to tackle the threat. As outlined in the Hong Kong Strategy and Action Plan on Antimicrobial Resistance 2023 – 2027, one of the priority interventions is to conduct regular surveys with the general public on AMR to inform strategies for health promotion (Strategic Intervention 13.1).[1]

The Telephone Survey Research Laboratory of the Hong Kong Institute of Asia-Pacific Studies ("HKIAPS") of The Chinese University of Hong Kong was commissioned by the Infection Control Branch of the Centre for Health Protection of the Department of Health to conduct a territory-wide telephone survey in 2022, 2023 and 2024. This survey was designed to explore the knowledge, attitude and practice ("KAP") of the general public with respect to antibiotics and their awareness of antibiotic resistance.

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[1] HKSAR (2022). Hong Kong Strategy and Action Plan on AMR 2023-2027. Available at: https://www.chp.gov.hk/files/pdf/amr_action_plan_eng_2023.pdf

1.2 Objectives

The objectives of the survey are as follows:

I.   To collect information on the KAP of the general public regarding antibiotic resistance,

II.   To compare the trends of the KAP among the general public;

III. To generate information to inform strategic health promotion activities among different population subgroups; and

IV.   To assess the effectiveness of health education and promotion on control of antibiotic resistance.

2. Research Methodology

2.1 Target population

The target population of this survey was non-institutional Hong Kong residents aged 15 or above who could speak Cantonese, Putonghua or English (excluding foreign domestic helpers).

2.2 Survey design

Telephone survey is an efficient tool for collecting data from a large random sample within a relatively short period of time, avoiding some of the problems encountered from the approach of conducting face-to-face household interviews, such as difficulties of entering the private estates, the long duration of the fieldwork, and the inability to tightly control the interviewers. Telephone surveys have traditionally covered only households with residential telephone lines (the so-called "landlines"). With the increasing popularity of mobile phones in Hong Kong, there has been a continued rise in the number of households that do not have landline connections. To address this bias, a dual-frame telephone survey design using both landline and mobile phone numbers was employed in this survey, in which a structured bilingual (Chinese and English) questionnaire was used.

2.3 Sampling

The survey sample included landlines and mobile phone numbers. Landline and mobile sampling frames were derived by combining the four known prefixes assigned to telecommunication service providers in Hong Kong under the most up-to-date "Numbering Plan" published by the Office of the Communications Authority, with four

suffixes from 0000 to 9999. Telephone numbers were randomly selected from the frames to produce the final landline survey samples and mobile phone survey samples for the fieldwork.

(a)   *Selection of Respondents for the landline samples*. In each successfully contacted residential unit having at least one landline, only one person aged 15 or above who was available at the moment was randomly selected for interview by the "Next Birthday Rule" (the person whose birthday comes soonest was asked to take the phone for the interview).

(b)   *Selection of Respondents for the mobile phone samples*. For each randomly selected mobile phone number, a person aged 15 or above who was a Hong Kong resident and the primary user of that particular number was eligible to be interviewed.

2.4 Implementation of the fieldwork

The fieldwork was conducted independently by the Telephone Survey Research Laboratory of HKIAPS at the Chinese University of Hong Kong. The survey was conducted manually by interviewers with the assistance of the Computer Assisted Telephone Interviewing System ("CATI"). With the help of the CATI system, the interviewers read each question that appeared on the monitor and entered the respondents' answers directly into the computer, thereby bypassing the time-consuming process of coding and data entry. This system enhances the efficiency of conducting telephone surveys.

In order to rehearse the interview procedures and examine the feasibility of the

questionnaire, a pilot study was employed before the formal launching of the fieldwork. The pilot study was conducted from 31 October 2024 to 4 November 2024 and a total of 30 interviews were successfully conducted. The number of successful interviews conducted in the pilot study were not included in the formal fieldwork. Based on the pilot study result, the questionnaire was further fine-tuned. For details of the content of the finalised questionnaire, please refer to **Appendix I**.

The formal fieldwork for this survey was carried out from 25 November 2024 to 17 December 2024. The interviews were mainly conducted from 6:15 p.m. to 10:15 p.m. However, since some respondents were not available at night, some interviews were scheduled to be conducted during daytime (10:00 a.m. to 6:00 p.m.). To further ensure that the survey results were not biased due to high non-contact or non-response rates, when there was no response to a call, further attempts were made to call that number at different times of the day and on different days of the week.

In the end, a total of 1,080 eligible Hong Kong residents aged 15 or above were successfully interviewed. Among these, 446 were from the landline sample and the other 634 were from the mobile sample. For details about the daily progress that was made on the work of enumeration, please refer to **Appendix II**.

2.5 Response rates

The response rate (RR) in this study is defined as the number of completed cases, divided by the sum of the completed cases, refusal cases and drop-out cases (including eligible persons not-at-home or not available during the fieldwork period). The basic formula is shown as follow:

$$RR = \frac{Completed}{Completed + Refused + Drop\ out\ (e.g.eligibles\ but\ not\ available)}$$

The response rates for the landline and mobile phone surveys were 52.2% and 58.1%, respectively. The combined response rate was 55.7%. For details of call dispositions and response rates for landline and mobile phone surveys, please refer to **Appendix III.**

2.6 Quality control

HKIAPS established and implemented quality-control measures to ensure a satisfactory standard of performance throughout the duration of the survey. Such measures included the following: (1) an instant telephone monitoring with audio recording system has been installed so that the fieldwork supervisor can monitor the process of the interview; (2) carrying out independent checks of at least 15% of the completed interviews; and (3) carrying out independent checks on the "ineligible" telephone numbers; and (4) checking the consistency of different aspects of the preliminary results.

2.7 Weighting of data

Weighting is a technique for correcting or making statistical adjustments to survey data after they have been collected in order to improve the accuracy of the survey estimates. Since there are different probabilities being selected for every eligible respondent (some of them own either landline or mobile phone only but the others may have both), differential propensities to respond (e.g. old females dislike being interviewed via mobile phone, young people seldom stay at home so that it is difficult to find them through residential landlines), and different sampling frames coverage problems among various groups in the population, the process of weighting is needed in the analysis of telephone surveys.

Weight adjustments were based on two steps. The first step was to compute the design weights by calculating the probability of being sampled in the combined landline frame

and mobile phone frame. The next step of weighting was to adjust the samples to the current population structure of Hong Kong which was based on the updated population's age-gender distribution (aged 15 or above excluding foreign domestic helpers) provided by the Census and Statistics Department. For details of the process of weighting, please refer to **Appendix IV**.

2.8 Rounding of figures

Since the survey data had been weighted, there might be a slight discrepancy between the sum of the individual responses and the total, as shown in the following tables or charts. These discrepancies were due to rounding.

2.9 Statistical analysis plan

All the data collected from the current survey were carefully validated, recoded, and analysed using the statistical software package SPSS version 29.

The statistical presentation of single variable included descriptive statistics such as frequency and percentage. When analysing more than one variable (such as sub-groups analysis of demographic variables), different statistical significance tests were applied to analyse different types of questions and different levels of measurement of variables (such as nominal, ordinal or interval data). For example, the Chi-square test was employed to detect whether there was an association between two variables (i.e. whether the variables were independent or related).

The level of statistical significance was often expressed as a p-value (calculated probability) between 0 and 1. The smaller the p-value, the stronger the confidence that we should reject the null hypothesis (no relationship between two variables or the

observed differences between two variables were just random). There were three levels

of significance frequently used in survey reports: $p < 0.05$, $p < 0.01$ and $p < 0.001$.

3. Profiles of the Respondents

In the survey, the respondents were asked about their gender and age (the information on gender was filled in by the interviewers). The weighted information on demographics is presented in Figure 3.1. Regarding gender, the proportion of female respondents (52.9%) was slightly greater than that of male respondents (47.1%).

Concerning the age group, 9.2% of the respondents were 15 to 24 years of age, 13.3% were 25 to 34, 15.8% were 35 to 44, 16.8% were 45 to 54, 18.8% were 55 to 64, and the remaining 26.1% were 65 years old or above.

Figure 3.1: Demographics of respondents (%)
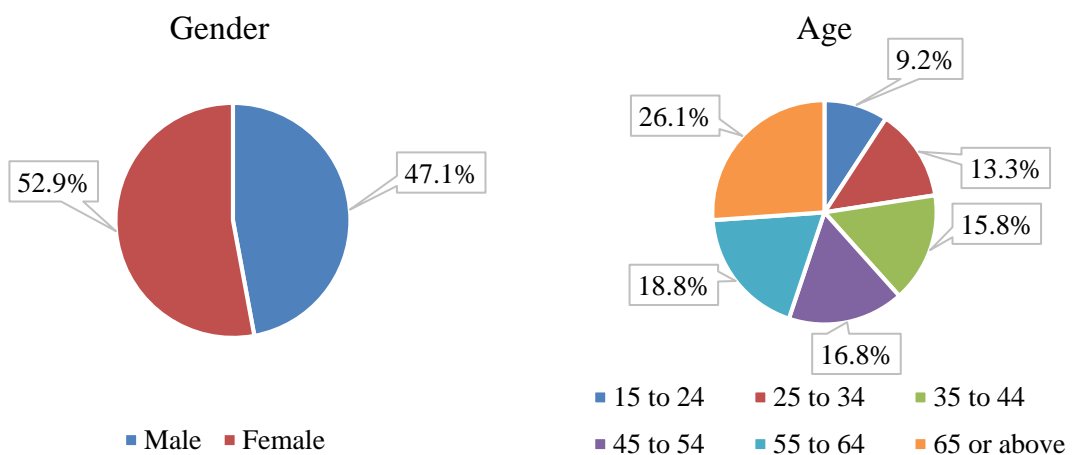
The unweighted and weighted distribution of frequency tables of gender and age can be found in **Appendix V**.

4. Survey Results

In this chapter, the descriptive statistics of each question are presented. Besides, sub-group analyses of each question are performed based on the breakdown of respondents' gender and age group. The chi-square test is used for sub-group analysis. The results of sub-group analyses which are statistically insignificant at the 5% level are not discussed in the text but reported in the tables only. All the following survey findings are based on weighted data.

4.1   Use of antibiotics

This section presents when respondents last took antibiotics, and how and where they obtained them.

4.1.1 Time of last taken antibiotics

More than one-third (36.0%) of all respondents reported that they last took antibiotics within the past year, while 44.7% said that they last took antibiotics more than a year ago (Figure 4.1.1).

Figure 4.1.1: Time of last taken antibiotics (%)
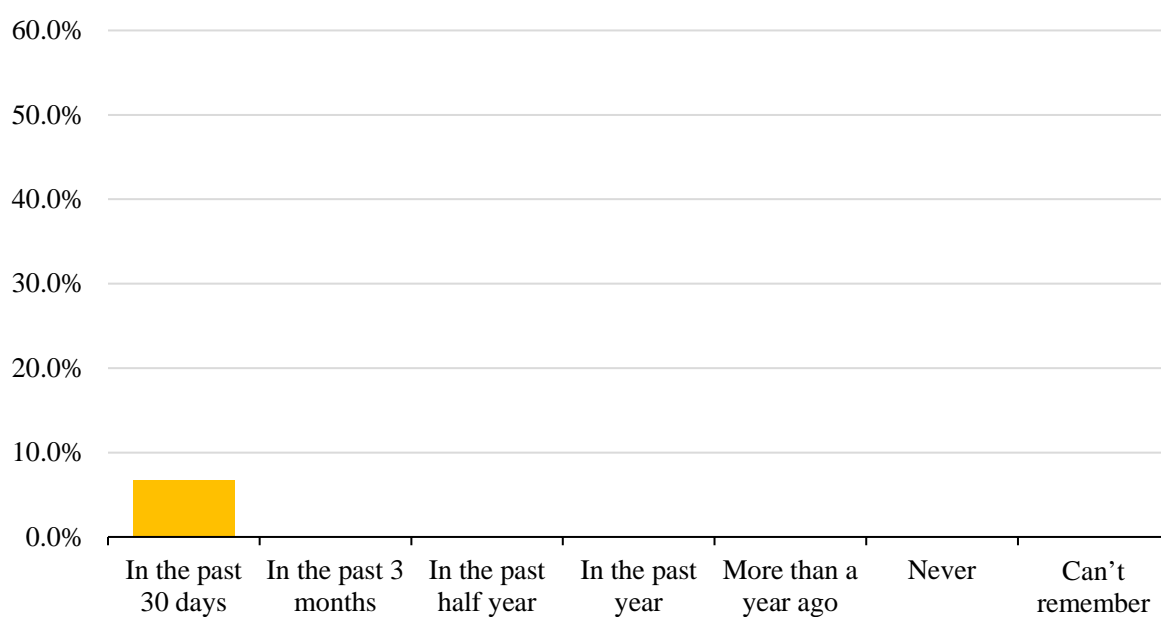
Base(N): Persons aged 15 and over = 1080.
Question: A1 "When did you last take antibiotics?"

Analysed by age, those aged between 55 and 64 had a higher proportion of having their last taken antibiotics more than a year ago. There was no statistically significant difference in the time of last taken antibiotics between different genders (Table 4.1.1).

Table 4.1.1: Time of last taken antibiotics by gender and age (%)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
In the past 30 days	7.6	5.9	4.8	7.3	6.8	7.1	6.3	7.1
In the past 3 months	5.9	9.1	11.9	9.8	7.9	3.9	8.6	6.3
In the past half year	9.9	11.7	11.2	15.7	14.2	14.2	5.7	7.7
In the past year	9.7	12.0	8.0	14.8	13.6	13.6	9.0	8.0
More than a year ago	45.4	44.2	46.1	40.9	42.5	44.9	52.0	42.2
Never	12.5	8.7	11.7	9.8	9.0	7.3	7.6	15.4
Can't remember	9.1	8.5	6.3	1.6	6.1	9.1	10.9	13.3
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.101		0.000***					

Question: A1 "When did you last take antibiotics?"
*p<0.05, **p<0.01, ***p<0.001

4.1.2 Whether the last taken antibiotics were prescribed by doctors

Those respondents who had taken antibiotics before were further asked whether the antibiotics last taken were prescribed by doctors. The vast majority (96.3%) of them responded "yes". The remaining 3.7% (no: 3.0%; could not remember: 0.6%) were then asked where they obtained their antibiotics. Among them, more than half (55.1%) reported that they obtained the antibiotics from a medical store or pharmacy (Figure 4.1.2).

Figure 4.1.2: Whether the last taken antibiotics were prescribed by doctors or came from other source (%)
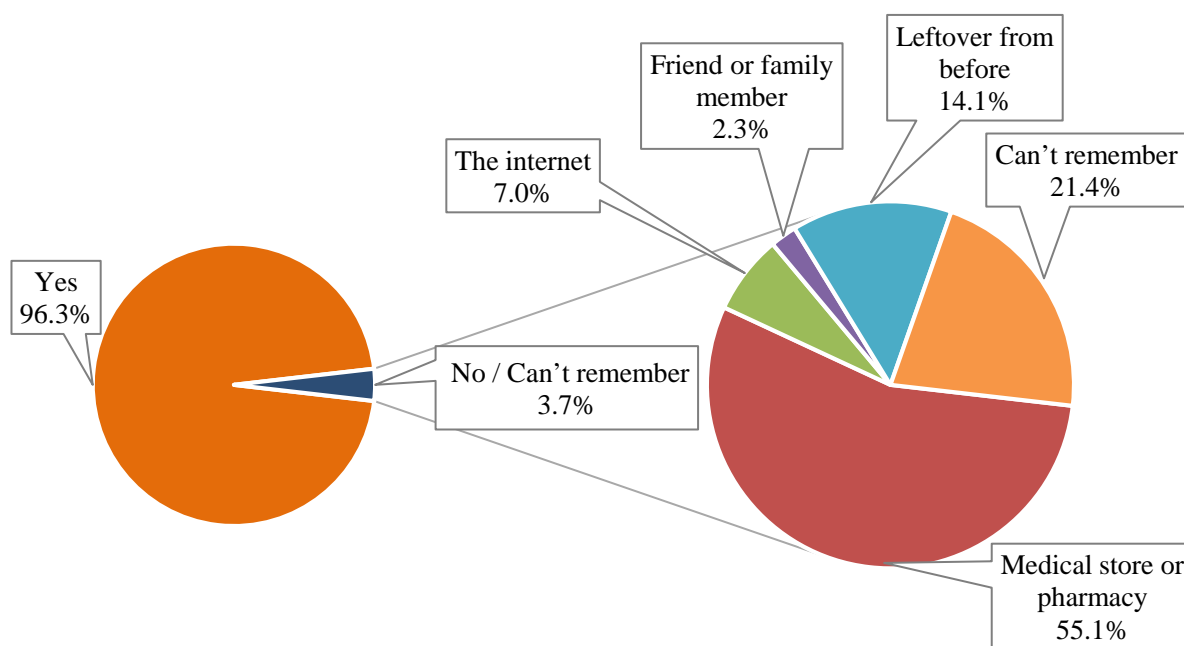
Base(N): Persons aged 15 and over who had taken antibiotics = 872.
Question: A2 "On that occasion, were the antibiotics prescribed by doctors (including dentists)?"

Base(N): Persons aged 15 and over whose last taken antibiotics were not prescribed by doctors or who could not remember whether they were prescribed by doctors = 32.
Question: A3 "On that occasion, where did you get the antibiotics?"

13

No statistically significant difference between the respondents' gender and age was found on whether the last taken antibiotics were prescribed by doctors (Table 4.1.2a).

Table 4.1.2a: Whether the last taken antibiotics were prescribed by doctors by gender and age (%)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Yes	94.7	97.7	94.7	99.3	96.3	94.8	96.0	96.6
No	4.2	2.0	5.3	0.7	3.7	4.1	3.8	1.6
Can't remember	1.1	0.3	0.0	0.0	0.0	1.1	0.2	1.8
Sample size	(399)	(473)	(82)	(128)	(145)	(151)	(165)	(201)
p-value (Chi-Square)	0.052		0.193					

Question: A2 "On that occasion, were the antibiotics prescribed by doctors (including dentists)?

As for the source of last taken antibiotics for respondents whose last taken antibiotics were not or could not remember if prescribed by doctors, no statistically significant difference was found between different genders or age groups (Table 4.1.2b).

Table 4.1.2b: Source of last taken antibiotics for those whose last taken antibiotics were not or could not remember if prescribed by doctors by gender and age (%)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Medical store or pharmacy	50.0	65.3	74.1	68.5	70.6	35.3	51.9	55.1
The internet	3.1	14.6	8.7	31.5	29.4	0.0	0.0	0.0
Friend or family member	0.0	7.0	17.2	0.0	0.0	0.0	0.0	0.0
Leftover from before	21.3	0.0	0.0	0.0	0.0	21.6	42.7	0.0
Somewhere / someone else	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Can't remember	25.7	13.1	0.0	0.0	0.0	43.1	5.4	44.9
Sample size	(21)	(11)	(4)	(1)	(5)	(8)	(7)	(7)
p-value (Chi-Square)	0.205		0.198					

Question: A3 "On that occasion, where did you get the antibiotics?"

4.1.3 Type of clinic or hospital respondents got the last taken antibiotics from

Respondents whose last taken antibiotics were prescribed by doctors were further asked which type of clinic or hospital their last taken antibiotics were obtained from. Around three-fifths (56.6%) of them replied that they obtained the antibiotics from private clinics (Figure 4.1.3).

Figure 4.1.3: Type of clinic or hospital respondents got the last taken antibiotics from (%)

Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors = 840.
Question: A4 "On that occasion, from which type of clinic or hospital did you get the antibiotics?"

Analysed by gender and age, a higher proportion of female respondents and those aged 25 to 44 got the last taken antibiotics from private clinics (Table 4.1.3).

Table 4.1.3: Type of clinic or hospital respondents got the last taken antibiotics from by gender and age (%)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Private clinics	52.0	60.4	54.2	66.2	63.6	58.1	53.8	47.6
Clinics under the Hospital Authority	12.7	11.8	14.3	8.2	7.9	11.4	16.8	13.8
Clinics under the Department of Health	2.2	3.8	3.1	0.2	2.6	1.4	6.6	3.5
Other clinics	2.8	2.5	1.0	4.3	3.2	3.0	0.5	3.2
Private hospital	10.4	8.1	6.3	11.6	9.4	12.9	9.1	5.7
Hospital under the Hospital Authority	14.9	10.4	14.4	9.5	9.8	11.1	8.9	19.3
Others	1.6	0.0	4.2	0.0	1.0	0.0	0.7	0.0
Can't remember	3.4	3.2	2.5	0.0	2.5	2.1	3.6	6.9
Sample size	(378)	(463)	(77)	(127)	(140)	(144)	(159)	(194)
p-value (Chi-Square)	0.023*		0.000***					

Question: A4 "On that occasion, from which type of clinic or hospital did you get the antibiotics?"
*p<0.05, **p<0.01, ***p<0.001

4.2 Instructions on health advice printed on antibiotics medicine bags

4.2.1 Whether respondents noticed the health advice on antibiotics medicine bags

If respondents answered that their last taken antibiotics were prescribed by doctors, they would be further asked whether they noticed the instructions on health advice printed on antibiotics medicine bags. A fifth of them (20.4%) reported that they had noticed the instructions. Respondents who had noticed the instructions would be further asked whether these instructions were helpful in reminding them to be aware of and maintain personal hygiene. More than four-fifths (82.0%) of this subgroup reported that the instructions were helpful (Figure 4.2.1).

Figure 4.2.1: Whether respondents noticed the instructions on antibiotics medicine bags and found them helpful (%)
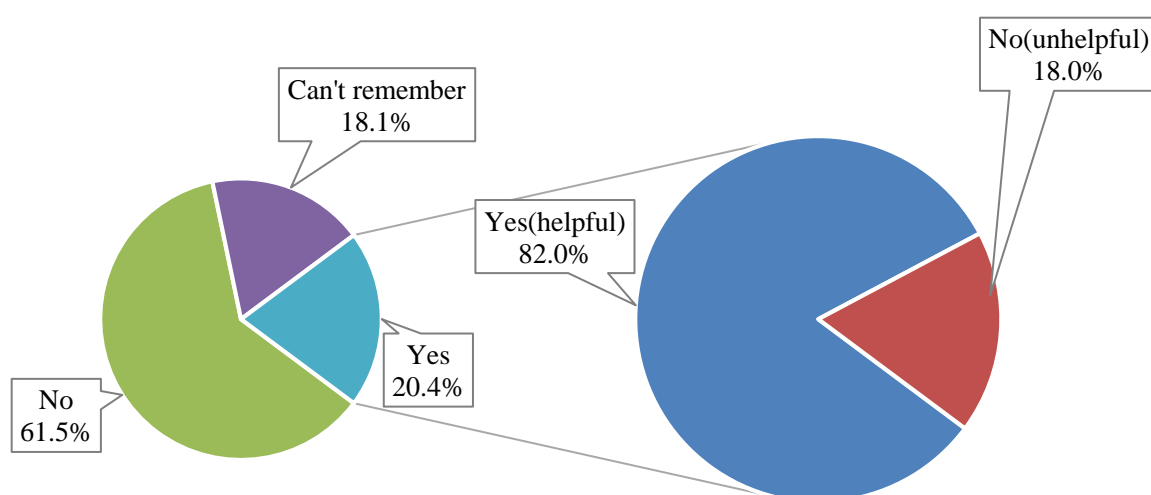
Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors = 840.

Question: A5 "On that occasion, did you notice there are instructions on personal hygiene on the antibiotics medicine bags?"

Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors and have noticed the instructions on personal hygiene on the antibiotics medicine bags = 171.

Question: A6 "Were these instructions helpful to remind you to be aware of and maintain personal hygiene?'"

18

Analysed by gender and age, male respondents and those aged between 15 and 24 had a higher rate of noticing the instructions on antibiotics medicine bags. There was no statistically significant difference in whether they found the instructions helpful between different genders or age groups (Table 4.2.1).

Table 4.2.1: Whether respondents noticed the instructions on antibiotics medicine bags and found them helpful by gender and age (%)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Whether respondents noticed the instructions on antibiotics medicine bags								
Yes	23.5	17.8	33.5	19.0	18.9	15.8	12.0	27.3
No	56.8	65.4	54.0	64.3	61.0	65.8	67.9	54.8
Can't remember	19.7	16.8	12.5	16.6	20.1	18.4	20.1	17.9
Sample size	(378)	(463)	(77)	(127)	(140)	(144)	(159)	(194)
p-value (Chi-Square)	0.035*		0.006**					
Whether respondents found the instructions helpful								
Yes (helpful)	77.7	86.7	75.0	78.9	77.1	88.3	89.0	84.2
No (unhelpful)	22.3	13.3	25.0	21.1	22.9	11.7	11.0	15.8
Sample size	(89)	(82)	(26)	(24)	(26)	(23)	(19)	(53)
p-value (Chi-Square)	0.122		0.720					

Question: A5 "On that occasion, did you notice there are instructions on personal hygiene on the antibiotics medicine bags?"; A6 "Were these instructions helpful to remind you to be aware of and maintain personal hygiene?"
*p<0.05, **p<0.01, ***p<0.001

4.2.2 Frequency of practising the health advice during the last medication period

If respondents said that their antibiotics last taken were prescribed by doctors, they would be asked how often they practised the health advice listed on antibiotics medicine bags. During the most recent medication period, the proportions of individuals who always or seldom practised the health advice when handling or taking antibiotics are listed below:

  a. Eat or drink only thoroughly cooked or boiled items: 97.6% (always: 91.4%; seldom: 6.1%);

  b. Wear surgical mask if you have respiratory symptoms: 95.1% (always 74.5%; seldom: 20.6%);

  c. Disinfect and cover all wounds: 91.8% (always 63.7%; seldom: 28.1%);

  d. Young children with symptoms of infections should minimise contact with other children: 91.3% (always: 76.9%; seldom: 14.4%), and;

  e. Practise frequent hand hygiene: 85.2% (always 59.5%; seldom: 25.6%) (Figure 4.2.2).

Figure 4.2.2: Frequency of practising the health advice during the last medication period (%)
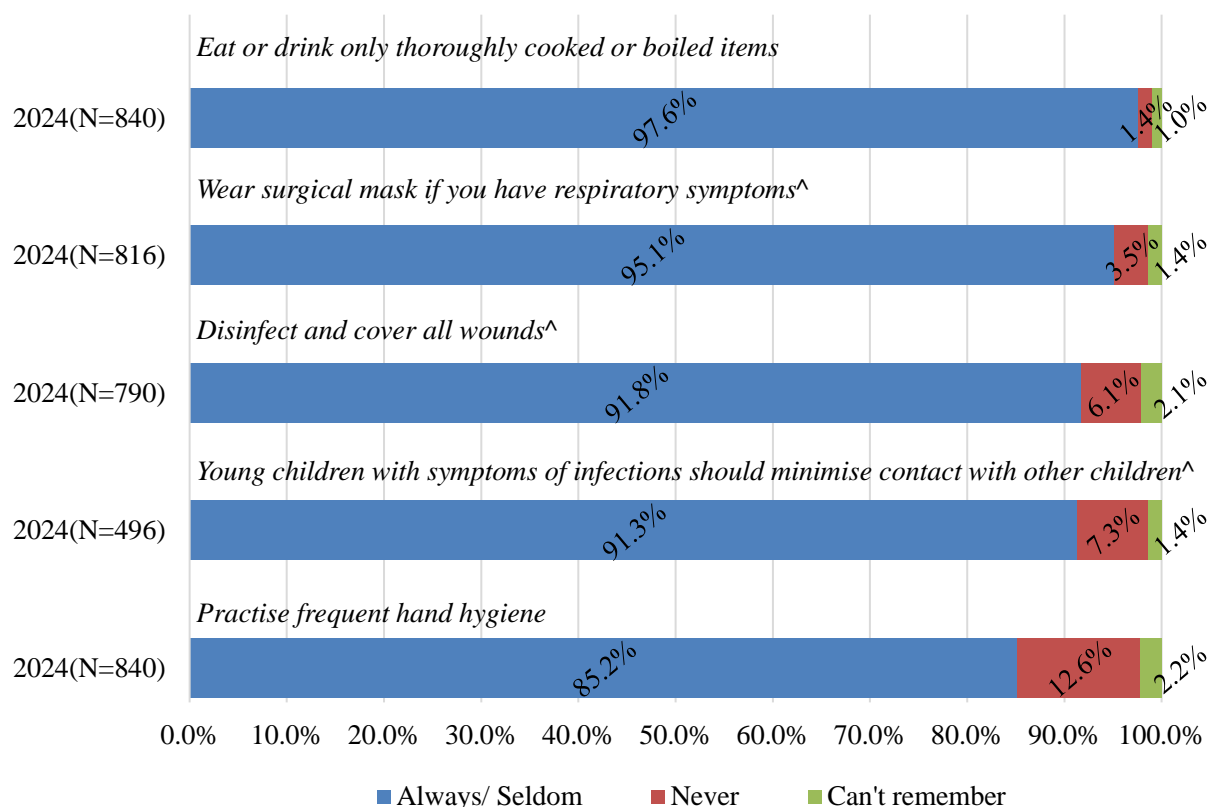
Eat or drink only thoroughly cooked or boiled items

2024(N=840): 97.6% / 1.4% / 1.0%

*Wear surgical mask if you have respiratory symptoms^*

2024(N=816): 95.1% / 3.5% / 1.4%

*Disinfect and cover all wounds^*

2024(N=790): 91.8% / 6.1% / 2.1%

*Young children with symptoms of infections should minimise contact with other children^*

2024(N=496): 91.3% / 7.3% / 1.4%

Practise frequent hand hygiene

2024(N=840): 85.2% / 12.6% / 2.2%

Legend: ■ Always/ Seldom   ■ Never   ■ Can't remember

Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors.
Question: A7a-e "On that occasion, how often did you practise the following when you handled or took antibiotics in your daily life during the medication period?"
Note: ^Those with no respiratory symptoms/no wounds/no young children at home were excluded respectively.

Compared with their female counterparts, male respondents had a lower percentage of always or seldom disinfecting and covering all wounds. They also had a lower percentage of always or seldom requesting their young children with symptoms of infections to minimize contact with other children. Those aged between 35 and 44 had the lowest percentage of always or seldom eating or drinking only thoroughly cooked or boiled items (Table 4.2.2).

Table 4.2.2: Frequency of practising the health advice during the last medication period by gender and age (%)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Practise frequent hand hygiene								
Always/ Seldom	82.9	87.0	91.4	84.3	84.2	84.9	84.1	85.0
Never	14.2	11.3	6.1	15.7	14.8	10.7	13.6	12.3
Can't remember	2.9	1.7	2.4	0.0	1.0	4.4	2.3	2.7
Sample size	(378)	(463)	(77)	(127)	(140)	(144)	(159)	(194)
p-value (Chi-Square)	0.206		0.279					
Eat or drink only thoroughly cooked or boiled items								
Always/ Seldom	97.6	97.5	97.2	97.3	94.8	97.5	98.7	99.0
Never	1.7	1.2	0.0	1.5	5.2	1.9	0.0	0.0
Can't remember	0.7	1.3	2.8	1.2	0.0	0.6	1.3	1.0
Sample size	(378)	(463)	(77)	(127)	(140)	(144)	(159)	(194)
p-value (Chi-Square)	0.652		0.006**					
*Disinfect and cover all wounds^*								
Always/ Seldom	89.2	94.0	87.2	92.1	95.7	94.3	91.9	88.6
Never	8.4	4.1	8.6	7.7	4.3	3.9	5.4	7.6
Can't remember	2.4	1.9	4.2	0.3	0.0	1.9	2.7	3.8
Sample size	(361)	(429)	(76)	(126)	(130)	(135)	(154)	(168)
p-value (Chi-Square)	0.036*		0.203					

(To be continued)

Table 4.2.2: Frequency of practising the health advice during the last medication period by gender and age (%) (Continued)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
*Wear surgical mask if you have respiratory symptoms^*								
Always/ Seldom	94.8	95.4	98.0	97.0	96.7	95.9	93.1	92.6
Never	3.8	3.2	0.0	3.0	2.2	2.1	5.6	5.4
Can't remember	1.4	1.4	2.0	0.0	1.1	2.0	1.3	2.0
Sample size	(364)	(451)	(77)	(125)	(135)	(138)	(157)	(184)
p-value (Chi-Square)	0.898		0.335					
*Young children with symptoms of infections should minimise contact with other children^*								
Always/ Seldom	87.1	95.0	86.5	94.0	94.1	94.5	89.7	85.0
Never	11.7	3.4	10.3	6.0	5.9	4.0	8.0	12.3
Can't remember	1.2	1.6	3.3	0.0	0.0	1.5	2.3	2.7
Sample size	(232)	(265)	(48)	(68)	(116)	(102)	(92)	(71)
p-value (Chi-Square)	0.002**		0.370					

Question: A7a-e "On that occasion, how often did you practise the following when you handled or took antibiotics in your daily life during the medication period?"
Note: ^Those with no wounds/no respiratory symptoms/no young children at home were excluded respectively.
*p<0.05, **p<0.01, ***p<0.001

4.3   Whether respondents completed the whole course of treatment as instructed by doctor

4.3.1   Whether respondents completed the whole course of treatment

The survey also asked respondents whose antibiotics last taken were prescribed by doctors whether they completed the whole course of treatment as instructed by their doctors. The majority (93.3%) of them reported that they completed the whole course of treatment. Of the respondents who did not complete the whole course of treatment, more than half (56.2%) replied that improvement of symptoms was the major reason (Figure 4.3.1).

Figure 4.3.1: Whether respondents completed the whole course of treatment as instructed by doctor and the main reason why they did not (%)

Yes
93.3%

Can't
remember
1.8%

No
4.9%

Presence of side
effects due to
antibiotics
16.3%

Forget to take
medicine
21.0%

Other
reasons
6.4%

Symptoms improve
56.2%
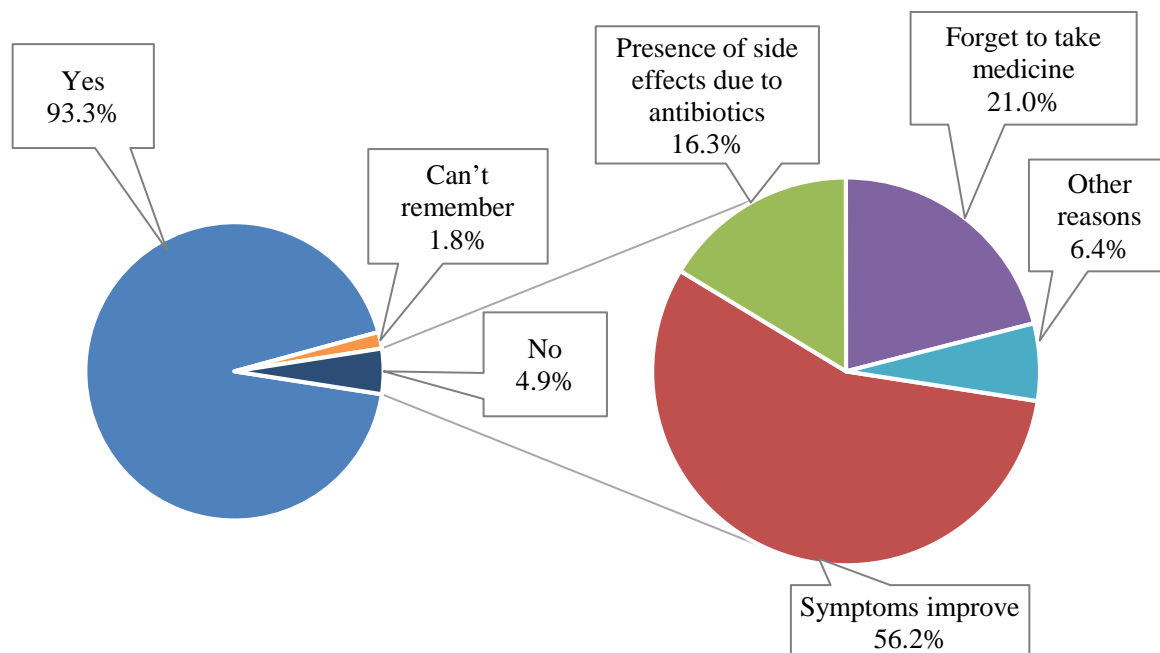
Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors = 840.
Question: A8"On that occasion, did you complete the whole course of treatment as instructed by doctor?"

Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors and did not complete the whole course of treatment as instructed by doctor = 41.
Question: A9"The main reason that you did not complete the whole course of treatment is:"

Those aged between 15 and 34 had a higher proportion of not completing the whole course of treatment as instructed by doctor, while no statistically significant difference was observed between genders in this regard. The difference between gender and age groups in the main reason for not completing the whole course of treatment was also not statistically significant (Table 4.3.1).

Table 4.3.1: Whether respondents completed the whole course of treatment as instructed by doctor and the main reason why they did not by gender and age

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Whether respondents completed the whole course of treatment as instructed by doctor								
Yes	91.7	94.7	89.8	90.3	97.7	92.8	95.0	92.6
No	6.4	3.7	8.2	9.7	1.3	3.6	3.7	5.1
Can't remember	1.9	1.6	2.0	0.0	1.0	3.6	1.3	2.3
Sample size	(378)	(463)	(77)	(127)	(140)	(144)	(159)	(194)
p-value (Chi-Square)	0.176		0.040*					
The main reason why they did not complete the whole course of treatment								
Symptoms improve	57.7	54.1	60.5	82.0	44.6	36.1	52.9	35.8
Presence of side effects due to antibiotics	16.2	16.5	0.0	0.0	20.5	43.4	28.8	24.8
Forget to take medicine	18.1	25.1	39.5	8.1	34.8	20.5	18.3	24.8
Lost the medicine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other reasons	8.0	4.3	0.0	9.9	0.0	0.0	0.0	14.6
Sample size	(24)	(17)	(6)	(12)	(2)	(5)	(6)	(10)
p-value (Chi-Square)	0.925		0.544					

Question: A8 "On that occasion, did you complete the whole course of treatment as instructed by doctor?"; A9 "The main reason that you did not complete the whole course of treatment is:"
*p<0.05, **p<0.01, ***p<0.001

4.4 Notices about "Do not purchase antibiotics without a prescription" posted at community pharmacies

The survey then asked respondents whether they had noticed the notices about "Do not purchase antibiotics without a prescription" posted at community pharmacies, and if so, whether they found the notice helpful in reminding them not to purchase antibiotics without doctor's prescription. Of those who had been to pharmacies and remembered whether they had noticed the notice, 13.5% said that they had noticed the notices (reminded:10.2%; not reminded: 3.3%) and another 86.5% said they had not (Figure 4.4).

Figure 4.4: Whether respondents noticed the notices posted at community pharmacies and found them useful (%)
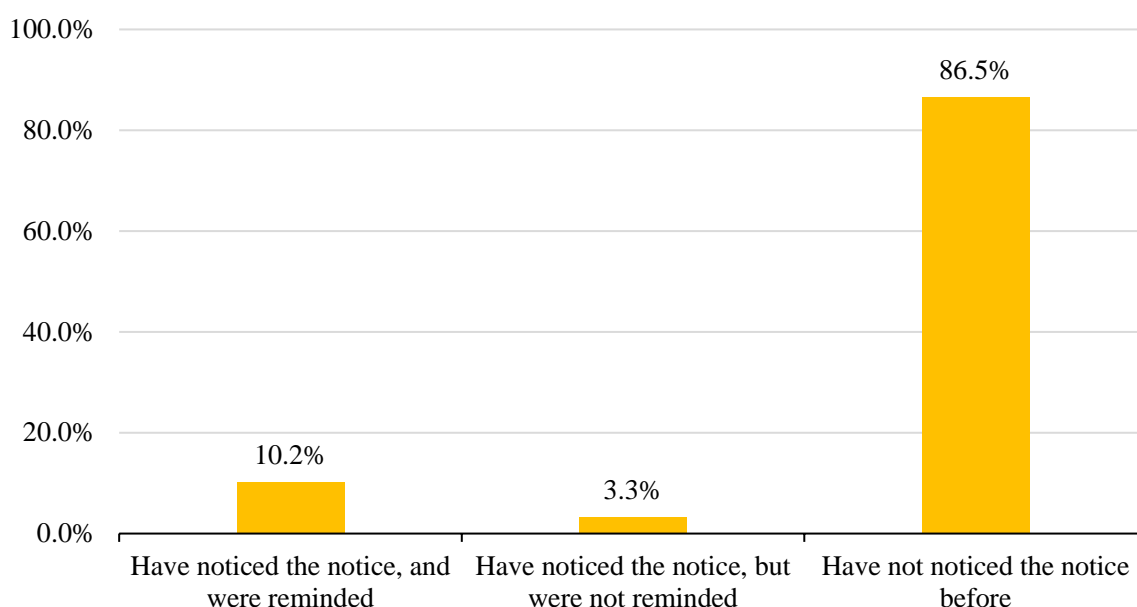
Base(N): Persons aged 15 and over who have been to pharmacies and remember whether they have noticed the notice about 'Do not purchase antibiotics without a prescription' = 862.
Question: A10 "Some people might have seen notices about 'Do not purchase antibiotics without a prescription' posted at community pharmacies. On last visit to community pharmacy, did you see this notice? If yes, did the notice help to remind you not to purchase antibiotics without doctor's prescription?"

Analysed by gender, a higher proportion of male respondents said that they had noticed the notice and were reminded. There was no statistically significant difference between age groups (Table 4.4).

Table 4.4: Whether respondents noticed the notices posted at community pharmacies and found them useful by gender and age (%)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Have noticed the notice, and were reminded	13.0	7.5	14.9	11.6	12.3	10.5	7.5	7.9
Have noticed the notice, but were not reminded	2.5	4.1	2.1	6.2	1.1	2.0	6.3	2.4
Have not noticed the notice before	84.5	88.4	83.0	82.2	86.6	87.5	86.2	89.7
Sample size	(417)	(445)	(77)	(116)	(146)	(151)	(164)	(208)
p-value (Chi-Square)	0.012*		0.086					

Question: A10 "Some people might have seen notices about 'Do not purchase antibiotics without a prescription' posted at community pharmacies. On last visit to community pharmacy, did you see this notice? If yes, did the notice help to remind you not to purchase antibiotics without doctor's prescription?"
*p<0.05, **p<0.01, ***p<0.001

4.5 Whether respondents had consulted doctor(s) for cold or flu and requested antibiotics in the past 12 months

All respondents were asked whether they had consulted doctor(s) for cold or flu in the past 12 months, and 45.9% answered that they had. Respondents who had consulted doctor(s) for cold or flu in the past 12 months were further asked whether they had asked for antibiotics during that consultation. The vast majority (95.0%) of the respondents replied that they did not do so (Figure 4.5).

Figure 4.5: Whether respondents had consulted doctor(s) for cold or flu and requested antibiotics in the past 12 months (%)

Can't remember or don't know whether it was cold or flu 1.4%

No 95.0%

No 52.7%

Yes 45.9%

Yes 4.6%

Can't remember 0.4%
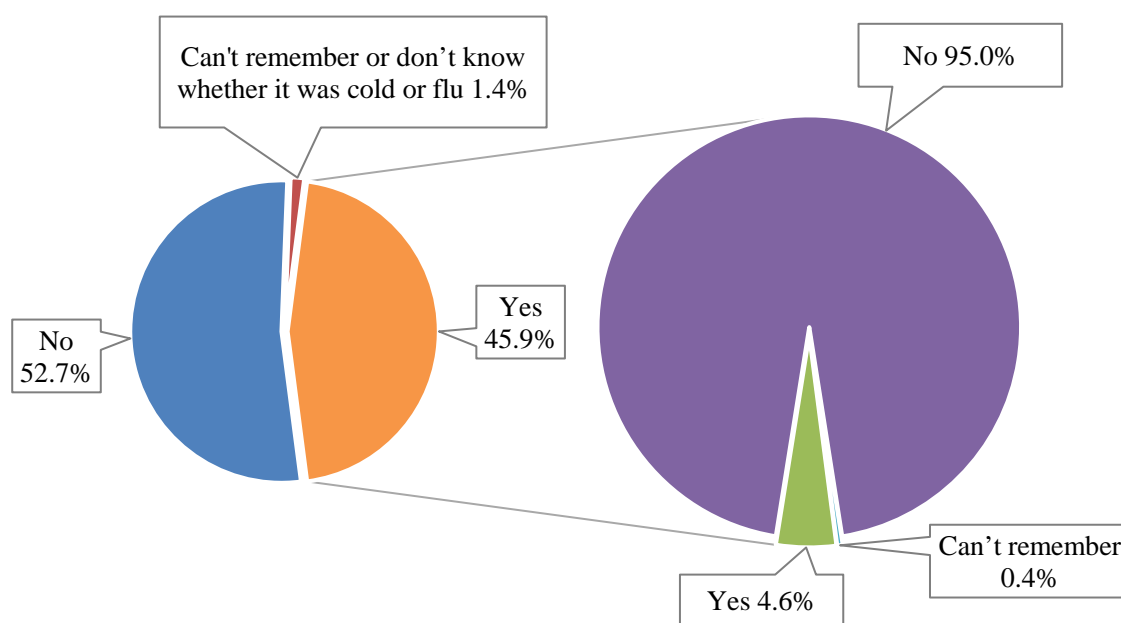
Base(N): Persons aged 15 and over = 1080.
Question: A11"In the past 12 months, had you consulted doctor(s) for cold or flu?"

Base(N): Persons aged 15 and over who had consulted a doctor for cold or flu in the past 12 months = 495.
Question: A12"Had you asked for antibiotics during that consultation?"

Compared with males and other age groups, females and those aged 25 to 34 had a higher rate of having consulted doctor(s) for cold or flu in the past 12 months. There was no statistically significant difference in request for antibiotics between genders and age groups (Table 4.5).

Table 4.5: Whether respondents had consulted doctor(s) for cold or flu and requested antibiotics in the past 12 months by gender and age (%)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
In the past 12 months, had you consulted doctor(s) for cold or flu?								
Yes	42.7	48.7	49.5	57.0	50.6	47.4	42.8	37.2
No	56.3	49.4	50.5	42.2	46.8	50.7	56.2	61.1
Can't remember or don't know whether it was cold or flu	1.0	1.9	0.0	0.8	2.5	1.9	1.0	1.7
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.047*		0.012*					
Had you asked for antibiotics during that consultation?								
Yes	5.5	3.9	1.2	5.4	9.3	2.0	2.2	5.7
No	94.5	95.4	98.8	94.6	88.9	98.0	97.8	93.8
Can't remember	0.0	0.8	0.0	0.0	1.8	0.0	0.0	0.5
Sample size	(217)	(278)	(49)	(82)	(87)	(86)	(87)	(105)
p-value (Chi-Square)	0.316		0.173					

Question: A11 "In the past 12 months, had you consulted doctor(s) for cold or flu?"; A12 "Had you asked for antibiotics during that consultation?"
*p<0.05, **p<0.01, ***p<0.001

4.6   General views, knowledge and awareness

4.6.1   Whether respondents would accept the doctor's advice to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics or not

All respondents were asked when doctor's initial assessment indicated that antibiotic was not needed at the moment, whether they would accept doctor's advice to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics or not. A vast majority (93.9%) of the respondents said that they would accept the advice of the doctor (Figure 4.6.1).

Figure 4.6.1: Whether respondents would accept the doctor's advice to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics or not (%)
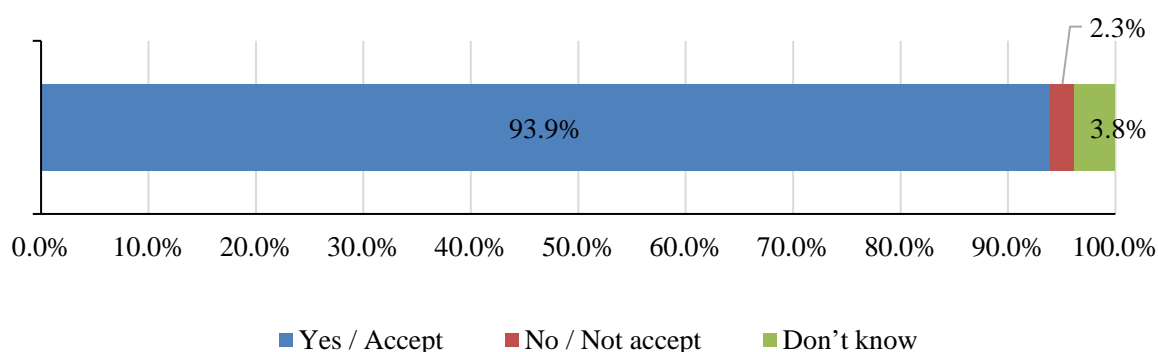
Base(N): Persons aged 15 and over = 1080.
Question: A13 "When you consult a doctor and his / her initial assessment for you indicated that antibiotic is not needed at the moment, would you accept if the doctor tells you to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics or not?"

Those aged between 25 and 34 were more inclined to accept the doctor's advice to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics or not. There was no statistically significant difference in acceptance of the doctor's advice between genders (Table 4.6.1).

Table 4.6.1: Whether respondents would accept the doctor's advice to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics or not by gender and age (%)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Yes / Accept	93.1	94.7	95.2	97.3	95.2	95.0	94.2	90.1
No / Not accept	2.9	1.6	1.6	1.9	3.5	1.9	3.8	1.0
Don't know	4.0	3.6	3.2	0.8	1.3	3.1	2.0	8.9
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.332		0.000***					

Question: A13 "When you consult a doctor and his / her initial assessment for you indicated that antibiotic is not needed at the moment, would you accept if the doctor tells you to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics or not?"
*p<0.05, **p<0.01, ***p<0.001

4.6.2 Whether respondents wanted doctors to share decision making with them on antibiotics prescription

Half (50.4%) of the respondents replied that they wanted doctors to share decision making with them on antibiotics prescription. (Figure 4.6.2).

Figure 4.6.2: Whether respondents wanted doctors to share decision making with them on antibiotics prescription (%)
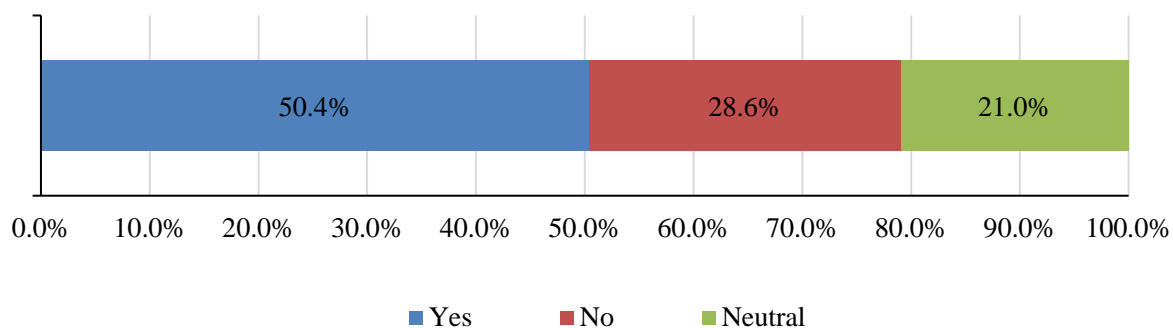
Base(N): Persons aged 15 and over = 1080.
Question: A14 "Do you want your doctor to share decision making with you on antibiotics prescription?"

Compared with other age groups, respondents aged 65 or above were least inclined to have doctors share decision making with them on antibiotics prescription. No statistically significant difference was found between genders (Table 4.6.2).

Table 4.6.2: Whether respondents wanted doctors to share decision making with them on antibiotics prescription by gender and age (%)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Yes	49.1	51.6	50.2	58.4	57.1	57.9	54.2	34.8
No	29.9	27.4	38.6	30.6	24.9	20.0	21.4	37.0
Neutral	21.0	21.0	11.3	10.9	17.9	22.1	24.4	28.2
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.634		0.000***					

Question: A14 "Do you want your doctor to share decision making with you on antibiotics prescription?"
*p<0.05, **p<0.01, ***p<0.001

4.6.3 Whether respondents preferred consulting doctors who would prescribe antibiotics more readily

The majority of the respondents (84.6%) did not prefer consulting doctors who would prescribe antibiotics more readily, whereas only 4.3% preferred so (Figure 4.6.3).

Figure 4.6.3: Whether respondents preferred consulting doctors who would prescribe antibiotics more readily (%)
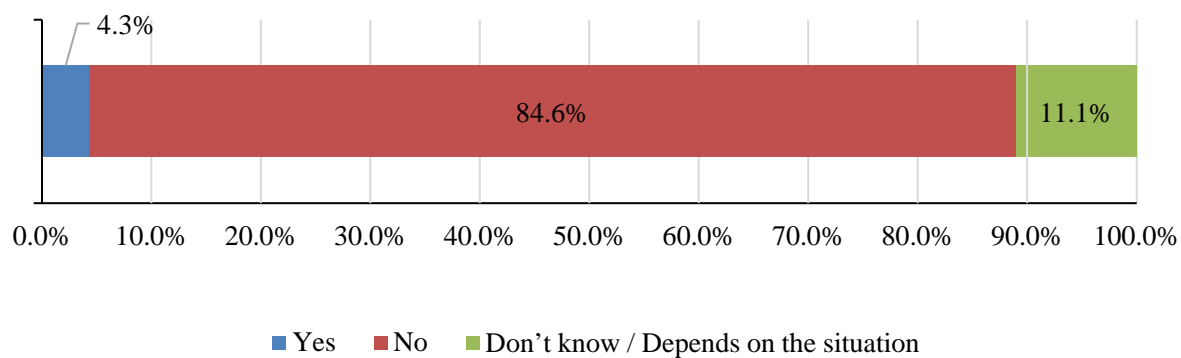
Base(N): Persons aged 15 and over = 1080.
Question: A15 "Do you prefer consulting doctors who prescribe antibiotics more readily?"

The comparison between genders and age groups revealed that male respondents and those aged between 25 and 34 had a higher rate of preferring to consult doctors who would prescribe antibiotics more readily (Table 4.6.3).

Table 4.6.3: Whether respondents preferred consulting doctors who would prescribe antibiotics more readily by gender and age (%)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Yes	5.4	3.4	2.2	9.8	6.3	3.1	4.0	2.1
No	80.2	88.5	86.5	81.5	87.1	85.5	87.7	81.2
Don't know / Depends on the situation	14.4	8.1	11.3	8.6	6.6	11.4	8.3	16.7
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.0008***		0.0006***					

Question: A15 "Do you prefer consulting doctors who prescribe antibiotics more readily?"
*p<0.05, **p<0.01, ***p<0.001

4.6.4 Knowledge of antibiotics

All respondents were asked whether certain health conditions need to use antibiotics, including bladder infection or urinary tract infection (UTI), cold and flu, skin or wound infection, body aches and headaches. The percentages of respondents who could correctly indicate which health conditions need or need not to be treated with antibiotics are listed below:

     a. Headaches (No: 92.7%);

     b. Body aches (No: 89.0%);

     c. Cold and flu (No: 82.0%);

     d. Bladder infection or urinary tract infection (UTI) (Yes: 54.8%); and

     e. Skin or wound infection (Yes: 48.6%) (Figure 4.6.4a).

Figure 4.6.4a: Whether respondents thought the selected health conditions need to use antibiotics (%)
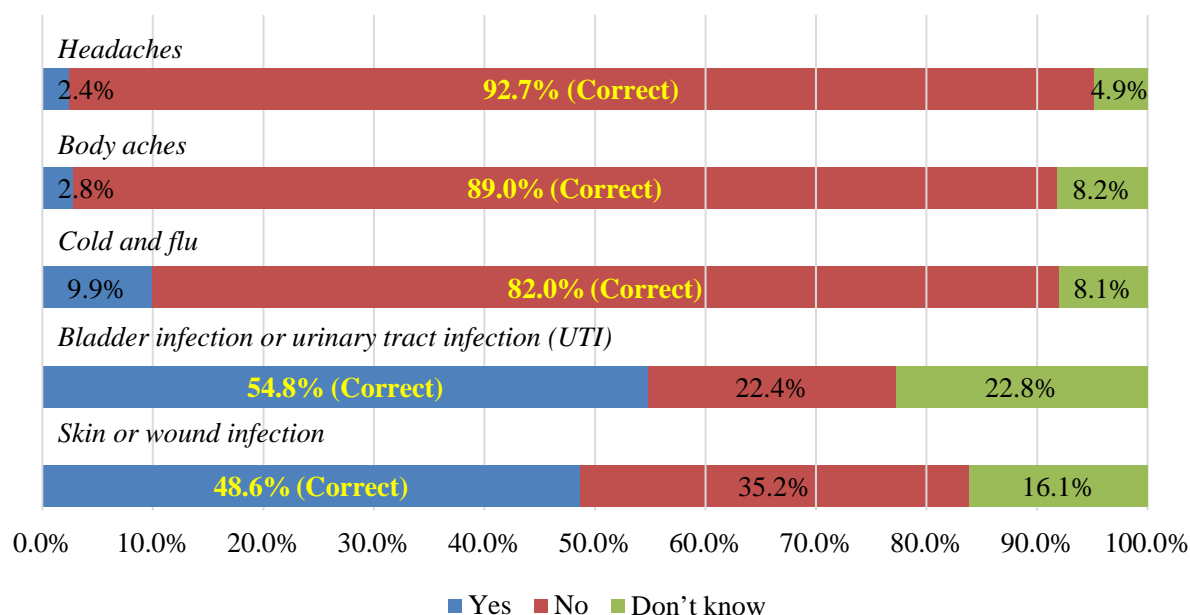
Base(N): Persons aged 15 and over = 1080.
Question: A16a-e "Do you think these conditions need to use antibiotics?"

Analysed by gender, no statistically significant difference was found in the answers to all of the selected health conditions (Figure 4.6.4b; Table 4.6.4).

Figure 4.6.4b: Respondents who correctly indicated whether the selected health conditions need to use antibiotics by gender (%)
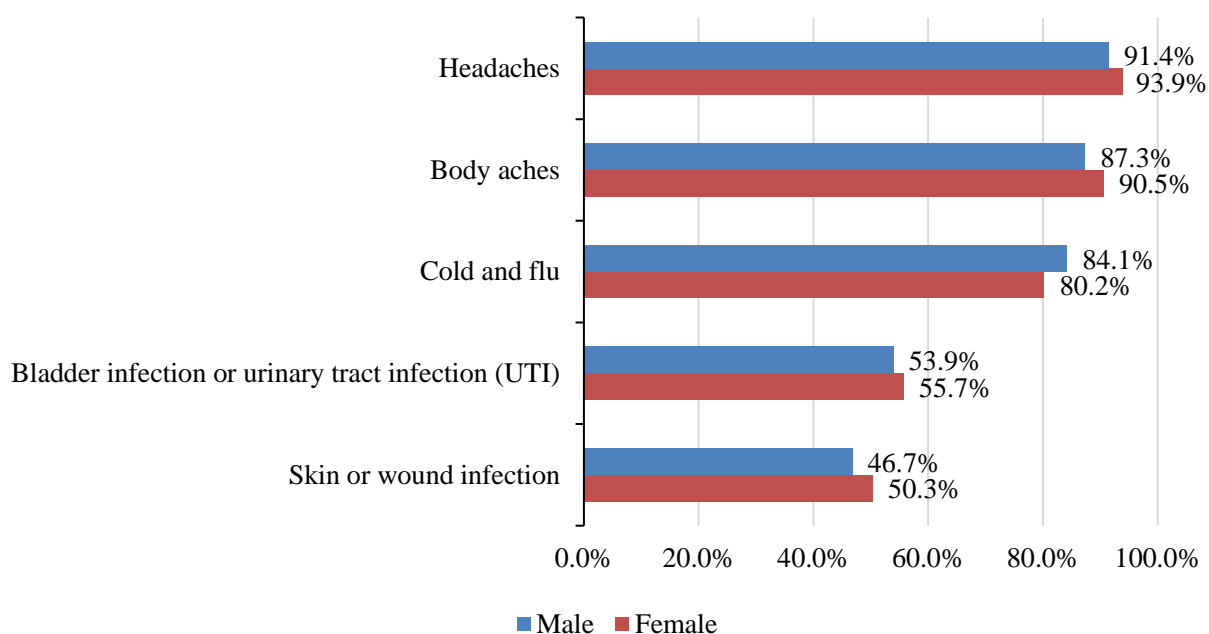
Base(N): Persons aged 15 and over = 1080.
Question: A16a-e "Do you think these conditions need to use antibiotics?"

Analysed by age, respondents aged 65 or above were less likely to give correct answers to skin or wound infection and headaches, while those aged between 45 and 54 were less likely to give correct answer to bladder infection or urinary tract infection (UTI). No statistically significant difference was found between age groups in the answers to the remaining health conditions (Figure 4.6.4c; Table 4.6.4).

Figure 4.6.4c: Respondents who correctly indicated whether the selected health conditions need to use antibiotics by age (%)
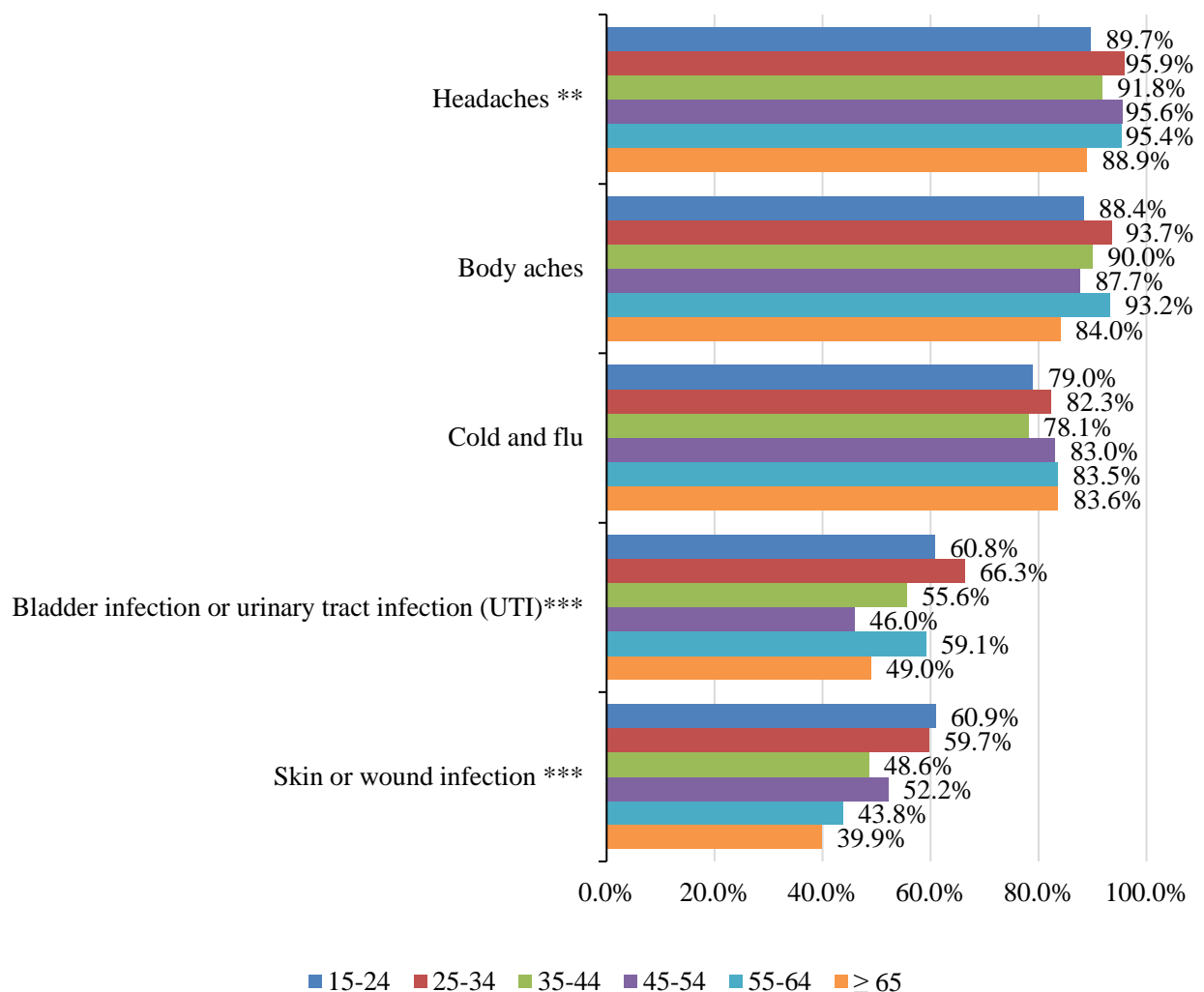
Base(N): Persons aged 15 and over = 1080.
Question: A16a-e "Do you think these conditions need to use antibiotics?"
*p<0.05, **p<0.01, ***p<0.001

Table 4.6.4: Whether respondents thought the selected health conditions need to use antibiotics by gender and age (%)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Bladder infection or urinary tract infection (UTI)								
Yes (Correct)	53.9	55.7	60.8	66.3	55.6	46.0	59.1	49.0
No	20.9	23.7	26.5	24.4	23.2	30.8	16.9	17.9
Don't know	25.2	20.7	12.7	9.3	21.2	23.2	24.0	33.1
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.172		0.000***					
Cold and flu								
Yes	8.6	11.0	18.5	9.4	13.1	9.1	8.1	7.1
No (Correct)	84.1	80.2	79.0	82.3	78.1	83.0	83.5	83.6
Don't know	7.2	8.8	2.5	8.3	8.8	7.9	8.4	9.3
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.237		0.068					
Skin or wound infection								
Yes (Correct)	46.7	50.3	60.9	59.7	48.6	52.2	43.8	39.9
No	38.6	32.2	30.6	28.8	37.8	33.0	43.0	34.5
Don't know	14.6	17.5	8.5	11.5	13.6	14.8	13.1	25.7
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.073		0.000***					
Body aches								
Yes	3.6	2.1	3.2	1.5	3.2	3.5	1.2	3.7
No (Correct)	87.3	90.5	88.4	93.7	90.0	87.7	93.2	84.0
Don't know	9.1	7.4	8.4	4.8	6.8	8.8	5.5	12.3
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.168		0.112					

(To be continued)

Table 4.6.4: Whether respondents thought the selected health conditions need to use antibiotics by gender and age (%) (Continued)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Headaches								
Yes	3.2	1.7	5.5	3.1	3.3	0.6	1.6	2.2
No (Correct)	91.4	93.9	89.7	95.9	91.8	95.6	95.4	88.9
Don't know	5.4	4.4	4.9	1.0	4.8	3.8	3.1	8.9
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.175		0.006**					

Question: A16a-e "Do you think these conditions need to use antibiotics?"

*p<0.05, **p<0.01, ***p<0.001

4.6.5 Whether respondents had heard of the selected terms related to antimicrobial resistance

All respondents were asked according to the language used during enumeration (i.e. Chinese or English), whether they had heard of the following terms including "Antibiotic resistance" (抗生素耐藥性), "Drug-resistant bacteria" (耐藥性細菌) and "Antimicrobial resistance" (抗菌素耐藥性). Majority of respondents had heard of "Antibiotic resistance" (70.9%) and "Drug-resistant bacteria" (70.4%). Only 23.9% of respondents had heard of "Antimicrobial resistance" (Figure 4.6.5a).

Figure 4.6.5a: Whether respondents had heard of the selected terms related to antimicrobial resistance (%)
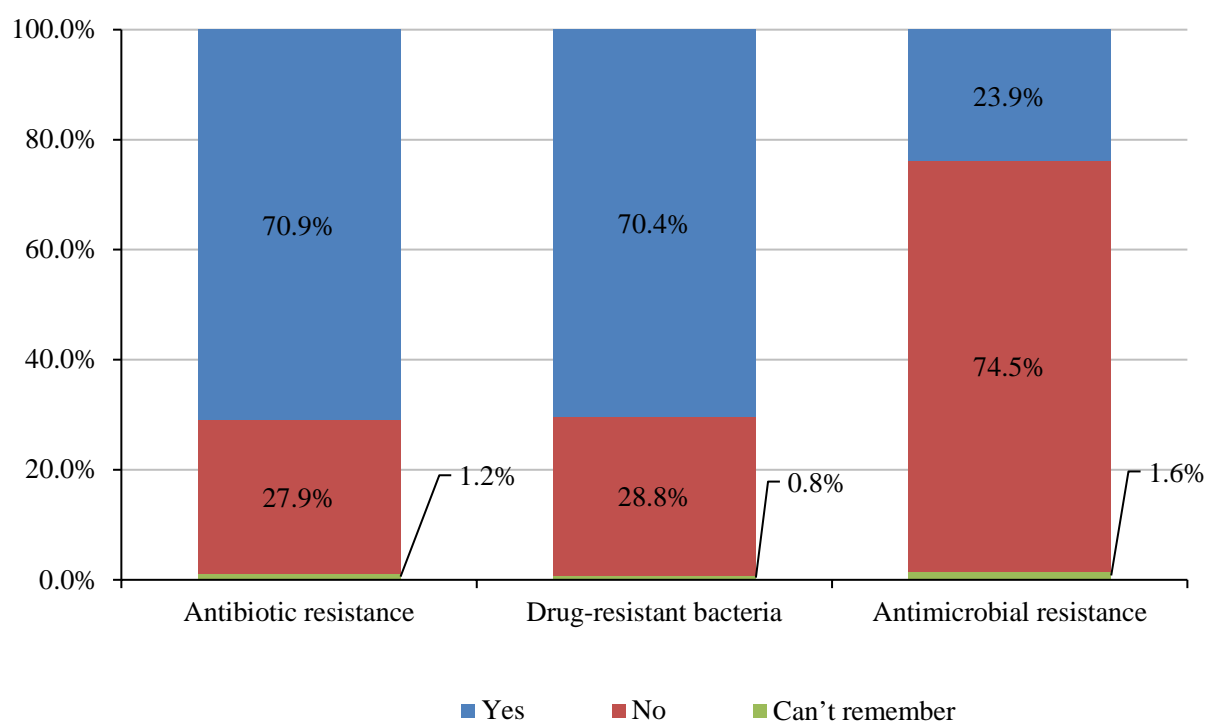
Base(N): Persons aged 15 and over = 1080.
Question: A17a-c "Have you heard of any of the following terms?"

Male respondents were more likely to have heard of the three listed terms (Figure 4.6.5b; Table 4.6.5).

Figure 4.6.5b: Respondents who had heard of the selected terms related to antimicrobial resistance by gender (%)
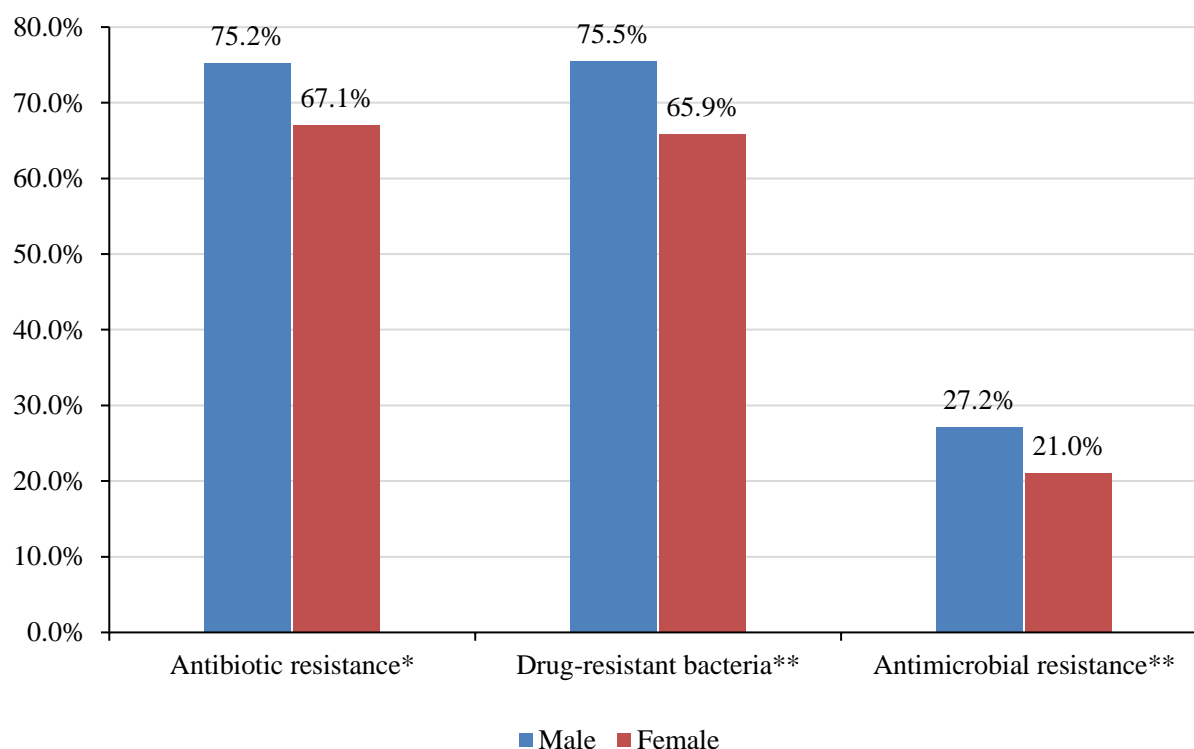
Base: Persons aged 15 and over = 1080.
Question: A17a-c "Have you heard of any of the following terms?"
*p<0.05, **p<0.01, ***p<0.001

Analysed by age, the percentage of having heard of "Antibiotic resistance" among respondents aged 65 or above was the lowest. There was no statistically significant difference between age groups for "Drug-resistant bacteria" and "Antimicrobial resistance" (Figure 4.6.5c; Table 4.6.5).

Figure 4.6.5c: Respondents who had heard of the selected terms related to antimicrobial resistance by age (%)
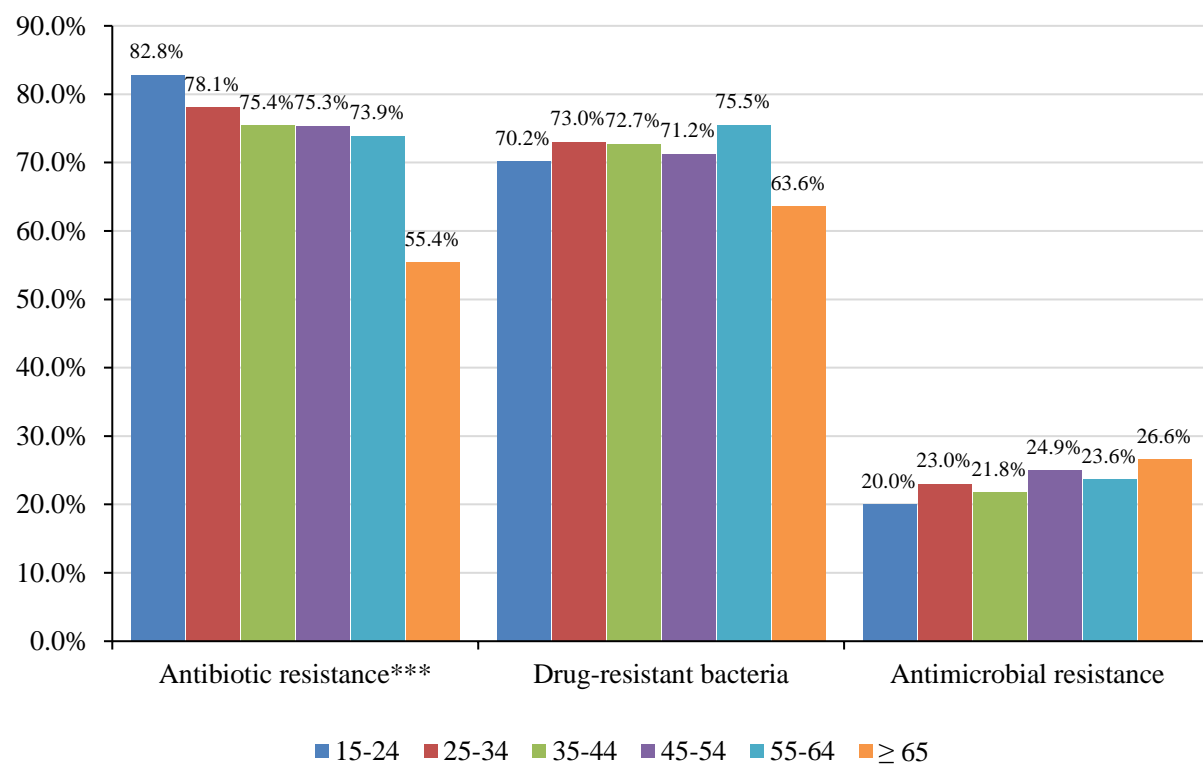
Base: Persons aged 15 and over = 1080.
Question: A17a-c "Have you heard of any of the following terms?"
*p<0.05, **p<0.01, ***p<0.001

Table 4.6.5: Whether respondents had heard of the selected terms related to antimicrobial resistance by gender and age (%)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Drug-resistant bacteria								
Yes	75.5	65.9	70.2	73.0	72.7	71.2	75.5	63.6
No	23.9	33.1	28.2	27.0	27.0	28.4	24.0	34.7
Can't remember	0.6	1.0	1.6	0.0	0.2	0.4	0.5	1.8
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value(Chi-Square)	0.003**		0.128					
Antibiotic resistance								
Yes	75.2	67.1	82.8	78.1	75.4	75.3	73.9	55.4
No	23.8	31.6	15.5	21.9	23.7	24.7	24.8	42.2
Can't remember	1.0	1.3	1.6	0.0	0.9	0.0	1.3	2.4
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value(Chi-Square)	0.013*		0.000***					
Antimicrobial resistance								
Yes	27.2	21.0	20.0	23.0	21.8	24.9	23.6	26.6
No	70.4	78.2	78.3	77.0	77.8	73.8	73.4	71.1
Can't remember	2.4	0.8	1.6	0.0	0.4	1.3	2.9	2.3
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value(Chi-Square)	0.004**		0.431					

Question: A17a-c "Have you heard of any of the following terms?"
*p<0.05, **p<0.01, ***p<0.001

4.6.6 Statements about antibiotic resistance

All respondents were asked whether the selected statements about antibiotic resistance were true or false. The percentages of respondents who could provide the correct answers are listed below:

a. I myself or other can use the antibiotics kept for treating illness next time (False: 90.8%);

b. Using separate utensils to handle cooked or ready-to-eat foods and raw foods can prevent cross-contamination of drug-resistant bacteria (True: 89.6%);

c. Some infections are becoming increasingly resistant to treatment by antibiotics (True: 83.1%);

d. If high-risk individuals (including pregnant women, young children, elderly and people with weakened immune systems) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced (True: 78.2%);

e. If people taking medicines such as antibiotic and stomach medicines (antacids) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced (True: 76.7%);

f. Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria (True: 74.4%);

g. Thorough cooking is effective to kill drug-resistant bacteria in food (True: 73.8%);

h. If bacteria are resistant to antibiotics, it can be very difficult or impossible to treat the infections they cause (True: 67.7%);

i. Antibiotics are anti-inflammatory drugs (False: 65.8%); and

j. Bacteria which are resistant to antibiotics can be spread from person to person (True: 42.2%) (Figure 4.6.6a).

Figure 4.6.6a: Whether respondents thought the selected statements about antibiotic resistance as true or false (%)

A18e: *"I myself or other can use the antibiotics kept for treating illness next time."*
6.0% | **90.8% (Correct)** | 3.2%

A18i: *"Using separate utensils to handle cooked or ready-to-eat foods and raw foods can prevent cross-contamination of drug-resistant bacteria."*
89.6% (Correct) | 5.2% 5.2%

A18b: *"Some infections are becoming increasingly resistant to treatment by antibiotics."*
83.1% (Correct) | 6.3% | 10.5%

A18g: *"If high-risk individuals (including pregnant women, young children, elderly and people with weakened immune systems) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced."*
78.2% (Correct) | 15.7% | 6.1%

A18j: *"If people taking medicines such as antibiotic and stomach medicines (antacids) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced."*
76.7% (Correct) | 12.4% | 11.0%

A18f: *"Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria."*
74.4% (Correct) | 15.3% | 10.3%

A18h: *"Thorough cooking is effective to kill drug-resistant bacteria in food."*
73.8% (Correct) | 15.5% | 10.7%

A18c: *"If bacteria are resistant to antibiotics, it can be very difficult or impossible to treat the infections they cause."*
67.7% (Correct) | 19.6% | 12.7%

A18a: *"Antibiotics are anti-inflammatory drugs."*
25.8% | **65.8% (Correct)** | 8.3%

A18d: *"Bacteria which are resistant to antibiotics can be spread from person to person."*
42.2% (Correct) | 38.8% | 19.0%

0.0% 10.0% 20.0% 30.0% 40.0% 50.0% 60.0% 70.0% 80.0% 90.0% 100.0%

■ True ■ False ■ Don't know

Base: Persons aged 15 and over = 1080.
Question: A18a-j "Please indicate whether you think the following statements are 'true' or 'false'."

46

Analysed by gender, male respondents were more likely to correctly identify 3 of the statements "Some infections are becoming increasingly resistant to treatment by antibiotics", "If bacteria are resistant to antibiotics, it can be very difficult or impossible to treat the infections they cause" and "Bacteria which are resistant to antibiotics can be spread from person to person" as true. Female respondents were more likely to correctly identify that the statement "I myself or other can use the antibiotics kept for treating illness next time" as false. There was no statistically significant difference between genders in the remaining statements (Figure 4.6.6b; Table 4.6.6).

Figure 4.6.6b: Respondents who correctly indicated whether the selected statements about antibiotic resistance were true or false by gender (%)
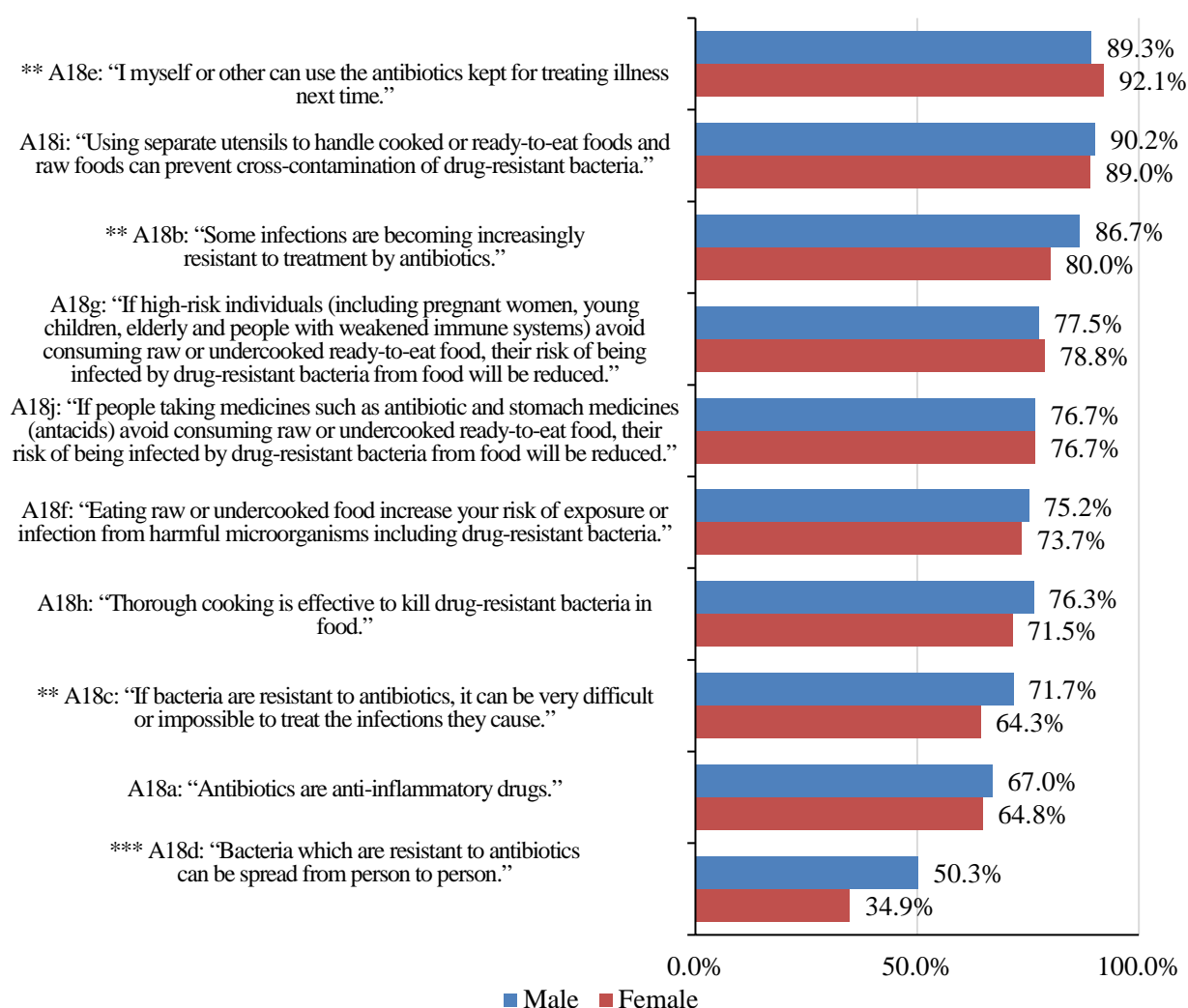

Base: Persons aged 15 and over = 1080.
Question: A18a-j "Please indicate whether you think the following statements are 'true' or 'false'."
*p<0.05, **p<0.01, ***p<0.001

Analysed by age, those aged 55 to 64 and those aged 65 or above were the two age groups that were less likely to give correct answers to the selected statements.
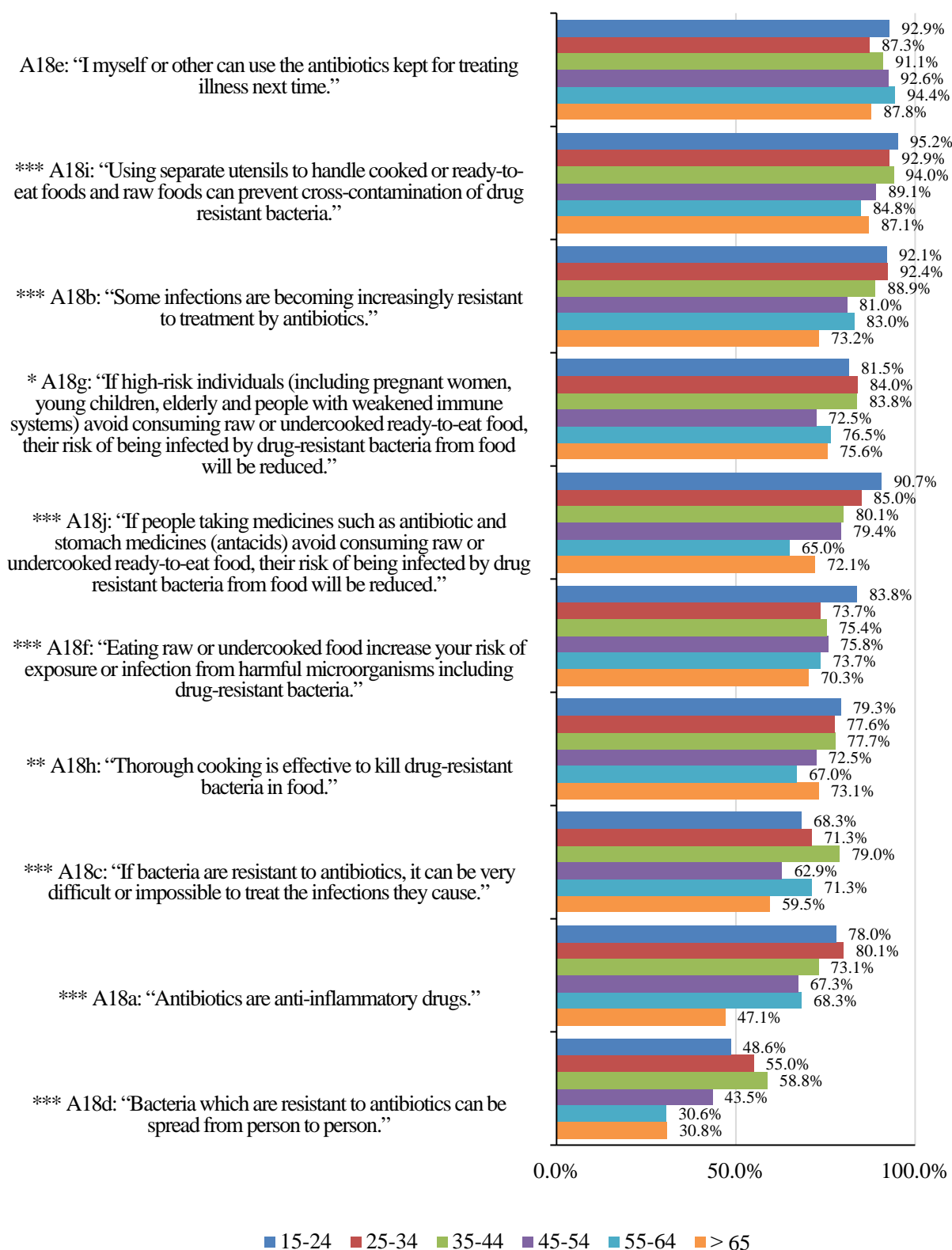
More specifically, those aged 65 or above had the lowest percentage of correct answers to 4 statements, including "Antibiotics are anti-inflammatory drugs", "Some infections are becoming increasingly resistant to treatment by antibiotics", "If bacteria are resistant to antibiotics, it can be very difficult or impossible to treat the infections they cause", and "Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria".

Those aged 55 to 64 also had the lowest percentage of correct responses to 4 statements, including "Bacteria which are resistant to antibiotics can be spread from person to person", "Thorough cooking is effective to kill drug-resistant bacteria in food", "Using separate utensils to handle cooked or ready-to-eat foods and raw foods can prevent cross-contamination of drug resistant bacteria", and "If people taking medicines such as antibiotic and stomach medicines (antacids) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug resistant bacteria from food will be reduced".

While those aged 45 to 54 had the lowest percentage of correct answer to the statement "If high-risk individuals (including pregnant women, young children, elderly and people with weakened immune systems) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced".

There was no significant difference between age groups in the responses to the statement "I myself or other can use the antibiotics kept for treating illness next time." (Figure 4.6.6c; Table 4.6.6).

Figure 4.6.6c: Respondents who correctly indicated whether the selected statements about antibiotic resistance were true or false by age (%)

A18e: "I myself or other can use the antibiotics kept for treating illness next time."
- 92.9%
- 87.3%
- 91.1%
- 92.6%
- 94.4%
- 87.8%

*** A18i: "Using separate utensils to handle cooked or ready-to-eat foods and raw foods can prevent cross-contamination of drug resistant bacteria."
- 95.2%
- 92.9%
- 94.0%
- 89.1%
- 84.8%
- 87.1%

*** A18b: "Some infections are becoming increasingly resistant to treatment by antibiotics."
- 92.1%
- 92.4%
- 88.9%
- 81.0%
- 83.0%
- 73.2%

* A18g: "If high-risk individuals (including pregnant women, young children, elderly and people with weakened immune systems) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced."
- 81.5%
- 84.0%
- 83.8%
- 72.5%
- 76.5%
- 75.6%

*** A18j: "If people taking medicines such as antibiotic and stomach medicines (antacids) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug resistant bacteria from food will be reduced."
- 90.7%
- 85.0%
- 80.1%
- 79.4%
- 65.0%
- 72.1%

*** A18f: "Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria."
- 83.8%
- 73.7%
- 75.4%
- 75.8%
- 73.7%
- 70.3%

** A18h: "Thorough cooking is effective to kill drug-resistant bacteria in food."
- 79.3%
- 77.6%
- 77.7%
- 72.5%
- 67.0%
- 73.1%

*** A18c: "If bacteria are resistant to antibiotics, it can be very difficult or impossible to treat the infections they cause."
- 68.3%
- 71.3%
- 79.0%
- 62.9%
- 71.3%
- 59.5%

*** A18a: "Antibiotics are anti-inflammatory drugs."
- 78.0%
- 80.1%
- 73.1%
- 67.3%
- 68.3%
- 47.1%

*** A18d: "Bacteria which are resistant to antibiotics can be spread from person to person."
- 48.6%
- 55.0%
- 58.8%
- 43.5%
- 30.6%
- 30.8%

Legend: ■ 15-24 ■ 25-34 ■ 35-44 ■ 45-54 ■ 55-64 ■ ≥ 65

Base: Persons aged 15 and over = 1080.

Question: A18a-j "Please indicate whether you think the following statements are 'true' or 'false'."

$*p<0.05, **p<0.01, ***p<0.001$

49

Table 4.6.6: Whether respondents thought the selected statements about antibiotic resistance as true or false by gender and age (%)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Antibiotics are anti-inflammatory drugs								
True	23.2	28.1	18.4	18.2	23.0	28.5	23.8	33.7
False (Correct)	67.0	64.8	78.0	80.1	73.1	67.3	68.3	47.1
Don't know	9.8	7.1	3.6	1.8	3.8	4.2	7.8	19.1
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.078		0.000***					
Some infections are becoming increasingly resistant to treatment by antibiotics								
True (Correct)	86.7	80.0	92.1	92.4	88.9	81.0	83.0	73.2
False	4.4	8.1	6.2	3.9	5.7	8.5	7.0	6.0
Don't know	8.9	12.0	1.6	3.7	5.4	10.5	9.9	20.7
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.008**		0.000***					
If bacteria are resistant to antibiotics, it can be very difficult or impossible to treat the infections they cause								
True (Correct)	71.7	64.3	68.3	71.3	79.0	62.9	71.3	59.5
False	18.6	20.4	28.0	26.0	15.3	23.1	18.0	14.7
Don't know	9.7	15.4	3.7	2.8	5.7	14.0	10.7	25.8
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.009**		0.000***					
Bacteria which are resistant to antibiotics can be spread from person to person								
True (Correct)	50.3	34.9	48.6	55.0	58.8	43.5	30.6	30.8
False	33.8	43.2	45.2	34.7	27.6	39.4	48.4	38.1
Don't know	15.8	21.8	6.3	10.3	13.5	17.2	21.0	31.1
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.000***		0.000***					

(To be continued)

50

Table 4.6.6: Whether respondents thought the selected statements about antibiotic resistance as true or false by gender and age (%) (Continued)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
I myself or other can use the antibiotics kept for treating illness next time								
True	8.3	4.1	6.4	10.3	5.2	3.8	3.8	7.4
False (Correct)	89.3	92.1	92.9	87.3	91.1	92.6	94.4	87.8
Don't know	2.4	3.9	0.8	2.4	3.7	3.6	1.8	4.8
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.007**		0.118					
Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria								
True (Correct)	75.2	73.7	83.8	73.7	75.4	75.8	73.7	70.3
False	14.5	16.0	12.9	21.7	13.7	13.9	18.6	12.3
Don't know	10.3	10.3	3.3	4.5	10.8	10.3	7.7	17.3
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.800		0.000***					
If high-risk individuals (including pregnant women, young children, elderly and people with weakened immune systems) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced								
True (Correct)	77.5	78.8	81.5	84.0	83.8	72.5	76.5	75.6
False	16.2	15.2	16.9	14.1	10.8	18.1	18.2	15.6
Don't know	6.3	6.0	1.6	1.9	5.3	9.4	5.2	8.8
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.863		0.019*					

(To be continued)

Table 4.6.6: Whether respondents thought the selected statements about antibiotic resistance as true or false by gender and age (%) (Continued)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Thorough cooking is effective to kill drug-resistant bacteria in food								
True (Correct)	76.3	71.5	79.3	77.6	77.7	72.5	67.0	73.1
False	14.7	16.2	16.9	16.6	13.8	13.6	21.7	12.2
Don't know	9.0	12.3	3.9	5.8	8.5	13.9	11.4	14.6
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.137		0.006**					
Using separate utensils to handle cooked or ready-to-eat foods and raw foods can prevent cross-contamination of drug-resistant bacteria								
True (Correct)	90.2	89.0	95.2	92.9	94.0	89.1	84.8	87.1
False	4.7	5.6	3.7	5.2	3.4	4.4	11.0	3.1
Don't know	5.1	5.3	1.1	1.9	2.6	6.5	4.2	9.8
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.770		0.000***					
If people taking medicines such as antibiotic and stomach medicines (antacids) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced								
True (Correct)	76.7	76.7	90.7	85.0	80.1	79.4	65.0	72.1
False	12.6	12.2	4.9	10.8	10.6	10.0	22.7	11.0
Don't know	10.7	11.2	4.4	4.2	9.3	10.6	12.4	16.9
Sample size	(508)	(572)	(100)	(144)	(171)	(181)	(203)	(282)
p-value (Chi-Square)	0.961		0.000***					

Question: A18a-j "Please indicate whether you think the following statements are 'true' or 'false'."
*p<0.05, **p<0.01, ***p<0.001

5. Further Analysis and Discussion

5.1 Comparative Analysis with Previous Results (2022 and 2023 round)

The findings of the comparative analysis of the 2024 survey with the 2022 and 2023 surveys are presented in this chapter.[2] Results that are statistically significant at the 5% level are discussed in the text in detail.

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[2] Caution should be taken when comparing the results of the question on whether the selected health conditions needed to use antibiotics, as the similar question (a13) in the 2022 survey asked whether the selected health conditions could be treated with antibiotics, which is not worded exactly the same as the question (a16) from 2023 onwards.

5.1.1 Time of last taken antibiotics

The proportion of respondents who had taken antibiotics in the past 12 months before enumeration in 2024 (36.0%) increased by 9.9 percentage points compared with 2022 (26.1%). The 2024 results are statistically significantly different from 2022, but not significantly different from 2023 (Figure 5.1.1).

Figure 5.1.1: Time of last taken antibiotics by year (%)
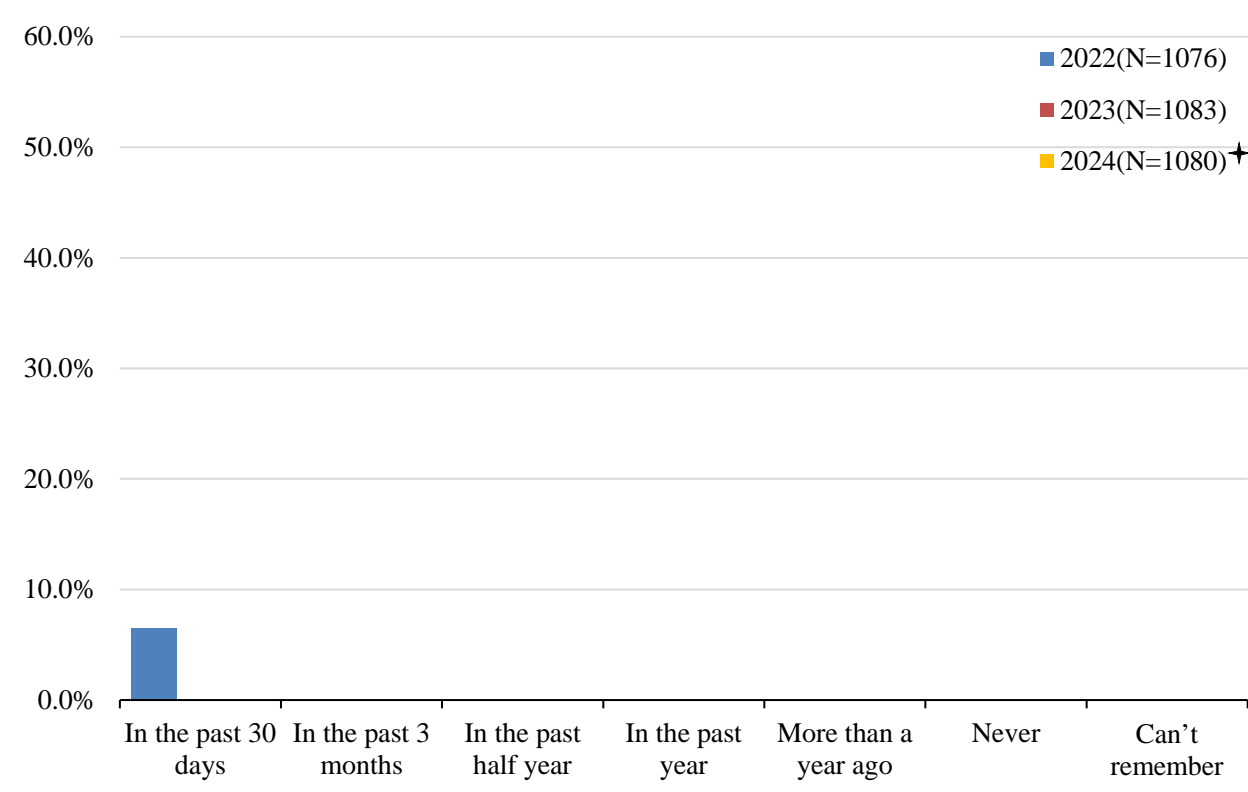
Base(N): Persons aged 15 and over.
Question: A1 "When did you last take antibiotics?"
Note: ✝ There was a significant difference between 2024 and 2022 (***p<0.001).

5.1.2 Whether the last taken antibiotics were prescribed by doctors

As to whether the last taken antibiotics were prescribed by doctors, the results for 2024 showed no statistically significant difference from 2023 or 2022 (Figure 5.1.2a).

Figure 5.1.2a: Whether the last taken antibiotics were prescribed by doctors by year (%)
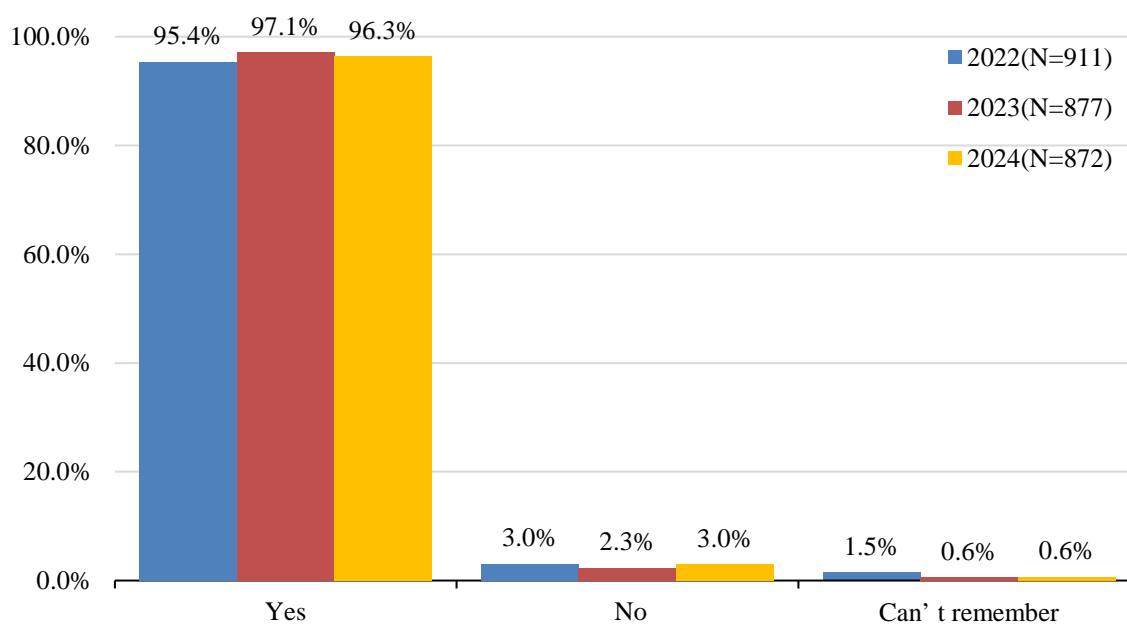
Base(N): Persons aged 15 and over who had taken antibiotics.
Question in 2022 and 2023: A2 "On that occasion, were the antibiotics prescribed by doctors?"
Question in 2024: A2 "On that occasion, were the antibiotics prescribed by doctors (including dentists)?"

No statistically significant difference was found between 2022 and 2024, or between 2023 and 2024 in the major source of the last taken antibiotics for those whose last taken antibiotics were not or could not remember if prescribed by doctors (Figure 5.1.2b).

Figure 5.1.2b: Source of last taken antibiotics for those whose last taken antibiotics were not or could not remember if prescribed by doctors by year (%)
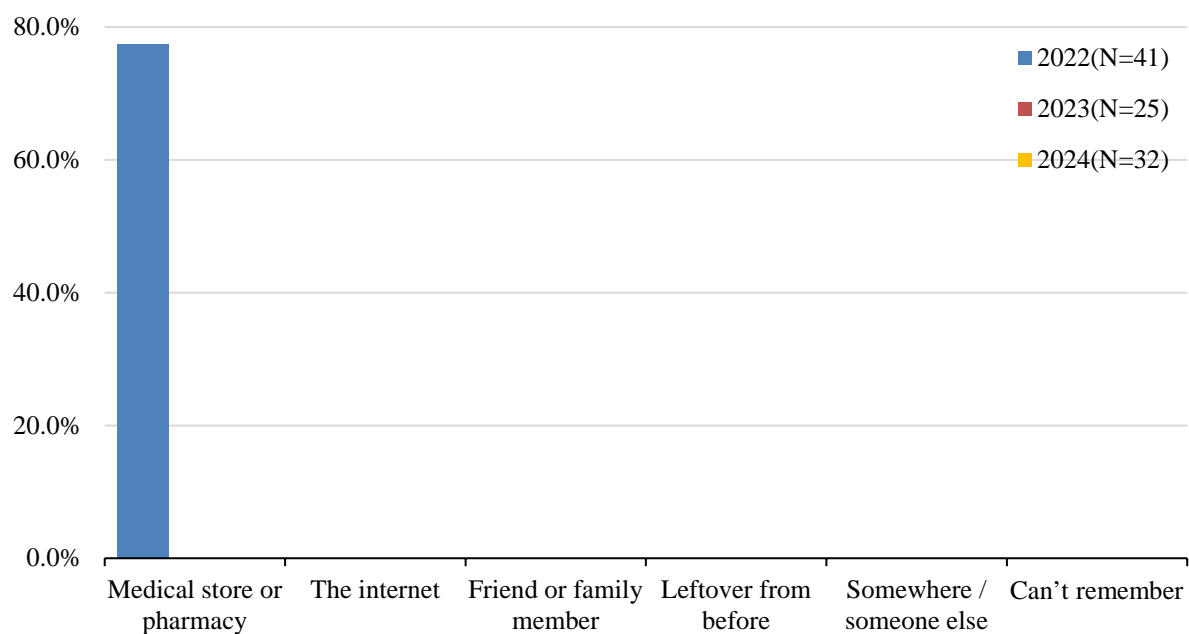
Base(N): Persons aged 15 and over whose last taken antibiotics were not prescribed by doctors or who could not remember whether they were prescribed by doctors.
Question: A3 "On that occasion, where did you get the antibiotics?"

5.1.3 Type of clinic or hospital from where respondents received the last taken antibiotics

There was no statistically significant difference between 2022 and 2024 in the type of clinic or hospital respondents got the last taken antibiotics for those whose last taken antibiotics were prescribed by doctors. The results for 2024 were statistically significantly different from 2023, the percentage who obtained the last taken antibiotics from a private clinic decreased from 62.2% in 2023 to 56.6% in 2024 (Figure 5.1.3).

Figure 5.1.3: Type of clinic or hospital respondents got the last taken antibiotics from by year (%)
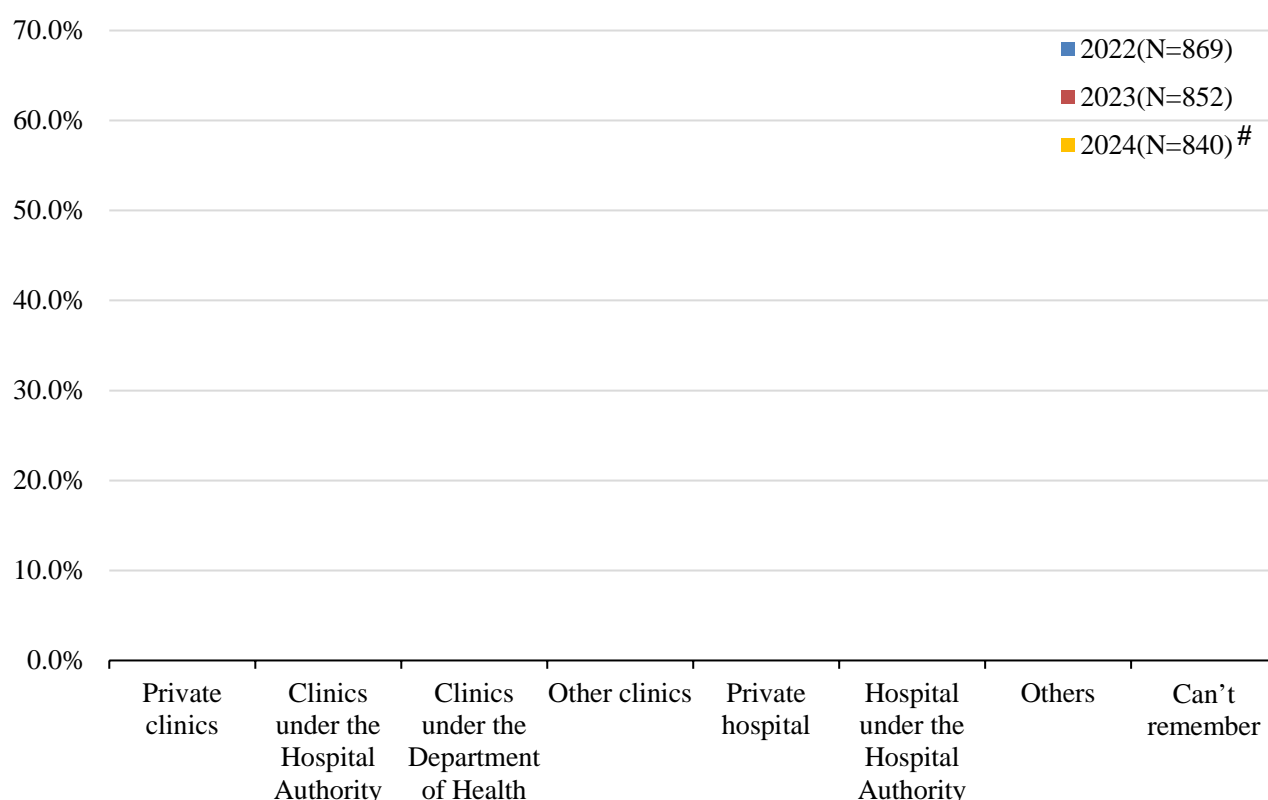
Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors.
Question: A4 "On that occasion, from which type of clinic or hospital did you get the antibiotics?"
Note: [#] There was a significant difference between 2024 and 2023 (*p<0.05).

5.1.4   **Whether respondents noticed the health advice on antibiotics medicine bags and found them helpful**

As to whether respondents whose last taken antibiotics were prescribed by doctors noticed the instructions on the medicine bags, the 2024 survey showed no statistically significant difference from the 2022 or 2023 surveys (Figure 5.1.4a).

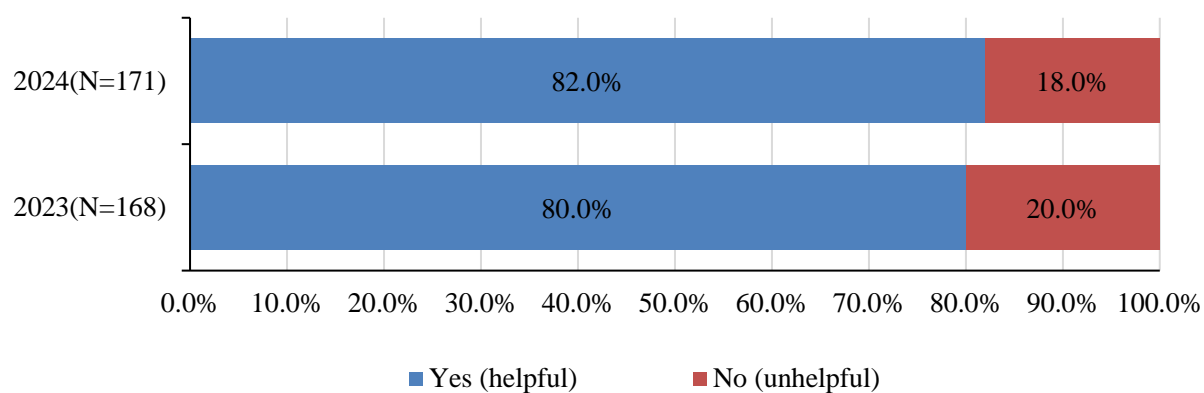*Figure 5.1.4a: Whether respondents noticed the instructions on antibiotics medicine bags by year (%)*
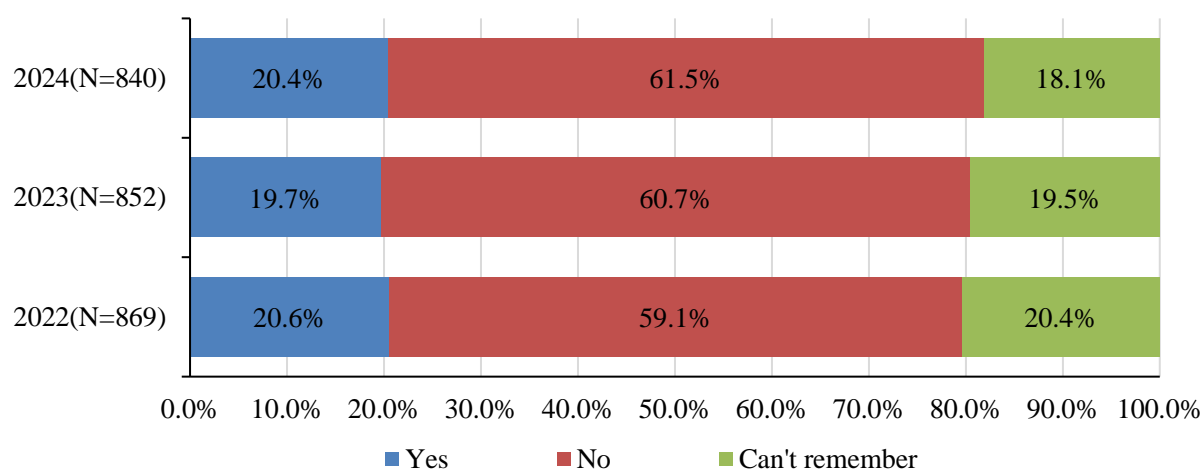
Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors.
Question: A5 "On that occasion, did you notice there are instructions on personal hygiene on the antibiotics medicine bags?"

As for the helpfulness of the instructions on antibiotics medicine bags in reminding respondents to be aware of and to maintain personal hygiene, the 2024 survey showed no statistically significant difference from the 2023 survey (Figure 5.1.4b).

Figure 5.1.4b: Whether the instructions on antibiotics medicine bags helpful to remind respondents to be aware of and maintain personal hygiene by year (%)

Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors and have noticed the instructions on personal hygiene on the antibiotics medicine bags.
Question: A6 "Were these instructions helpful to remind you to be aware of and maintain personal hygiene?'"

5.1.5 Frequency of practising the health advice during the last medication period

Among the respondents whose antibiotics last taken were prescribed by doctors, the proportion of always or seldom wearing surgical masks when they have respiratory symptoms when handling or taking antibiotics in daily life during the last medication period increased from 87.5% (always: 72.3%; seldom: 15.2%) in 2022 to 95.1% (always: 74.5%; seldom: 20.6%) in 2024. The frequency of practising this advice in 2024 was statistically significantly different from 2022, but not from 2023.

Besides, the proportion of always or seldom eating and drinking only thoroughly cooked or boiled items when handling or taking antibiotics in daily life during the last medication period increased from 96.5% (always: 89.6%; seldom: 7.0%) in 2023 to 97.6% (always: 91.4%; seldom:6.1%) in 2024. The frequency of practising this advice in 2024 was statistically significantly different from 2023, but not from 2022.

As for the frequency of practising other health advice, no statistically significant difference was found between 2022 and 2024, or between 2023 and 2024 (Figure 5.1.5).

Figure 5.1.5: Frequency of practising the health advice during the last medication period by year (%)
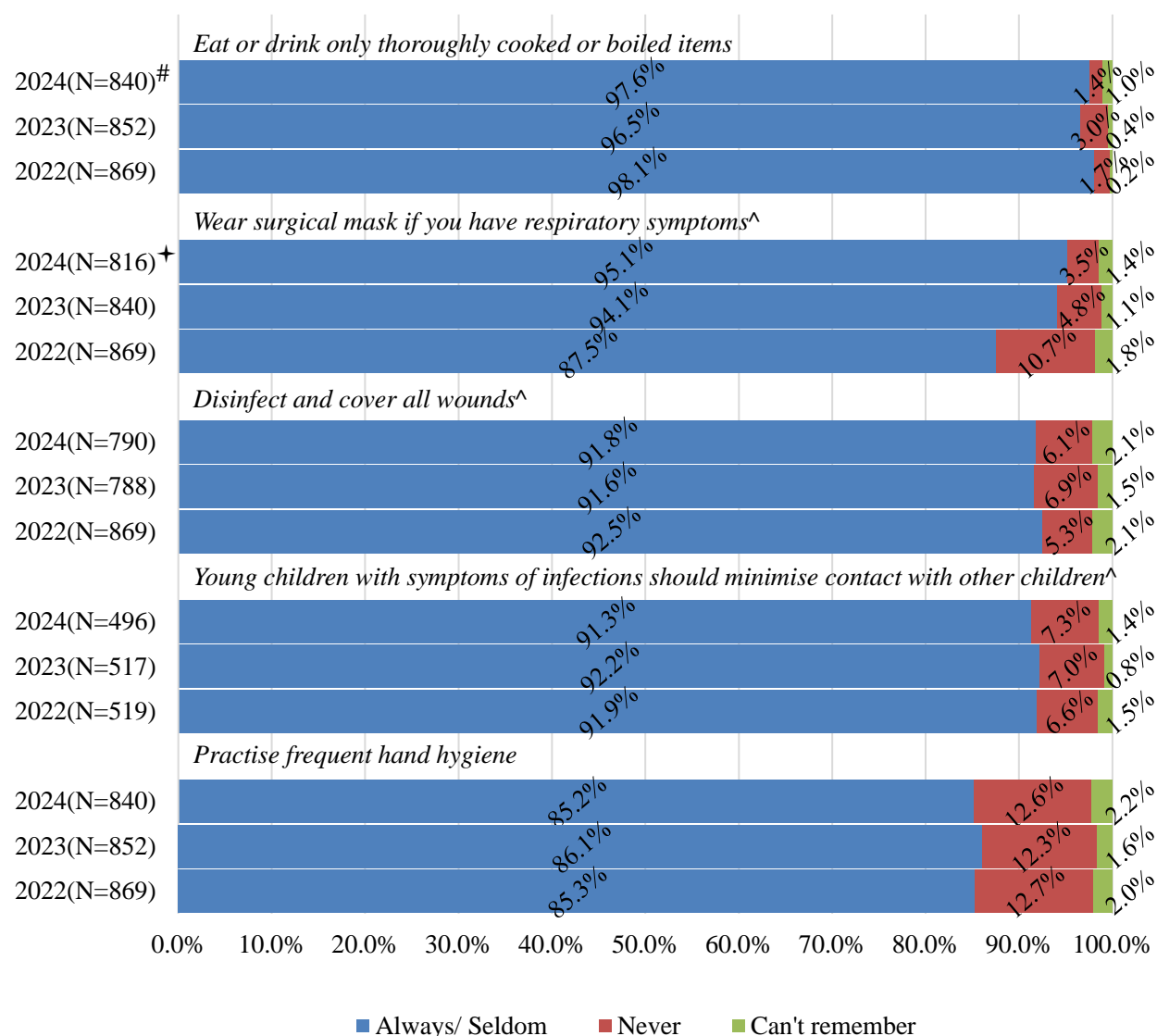
Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors.

Question: A7a-e "On that occasion, how often did you practise the following when you handled or took antibiotics in your daily life during the medication period?"

Note: ^Those with no respiratory symptoms/no wounds/no young children at home were excluded respectively; +There was a significant difference between 2024 and 2022 (***p<0.001); #There was a significant difference between 2024 and 2023 (*p<0.05).

5.1.6 Whether respondents completed the whole course of treatment as instructed by doctor

5.1.6.1 Whether respondents completed the whole course of treatment

As to whether those whose last taken antibiotics were prescribed by doctor completed the whole course of treatment as instructed by doctor, no statistically significant difference was observed between 2023 and 2024 (Figure 5.1.6.1).

Figure 5.1.6.1: Whether respondents completed the whole course of treatment as instructed by doctor by year (%)
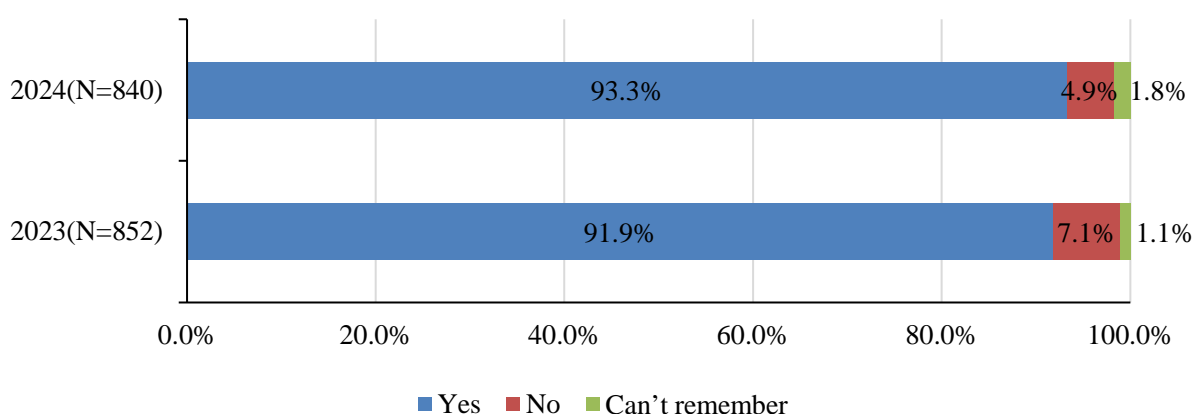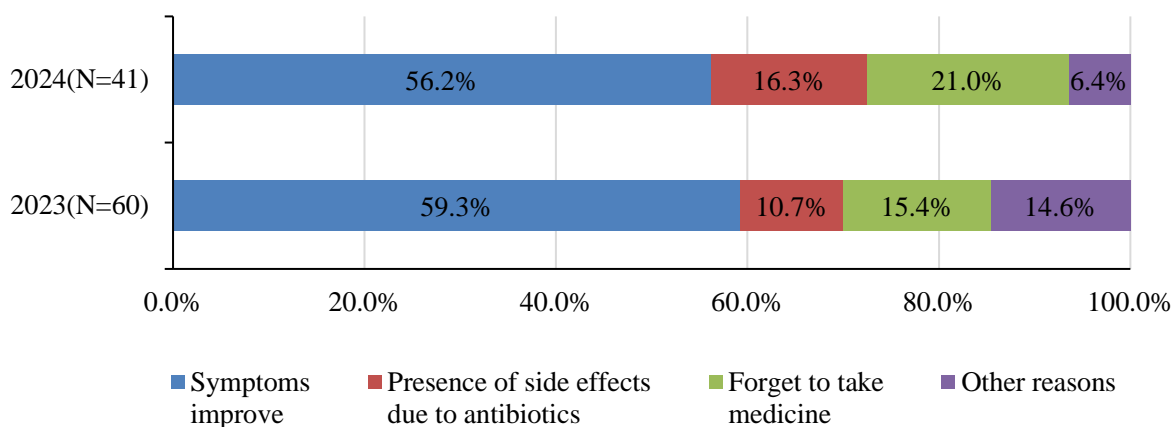

Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors.
Question: A8 "On that occasion, did you complete the whole course of treatment as instructed by doctor?"

5.1.6.2 Reasons for not completing the whole course of treatment

For those who did not complete the whole course of treatment as instructed by doctor, improvement of symptoms remained to be the most common reason. The results for 2024 showed no significant difference from 2023 (Figure 5.1.6.2).

Figure 5.1.6.2: Reasons for not completing the whole course of treatment by year (%)
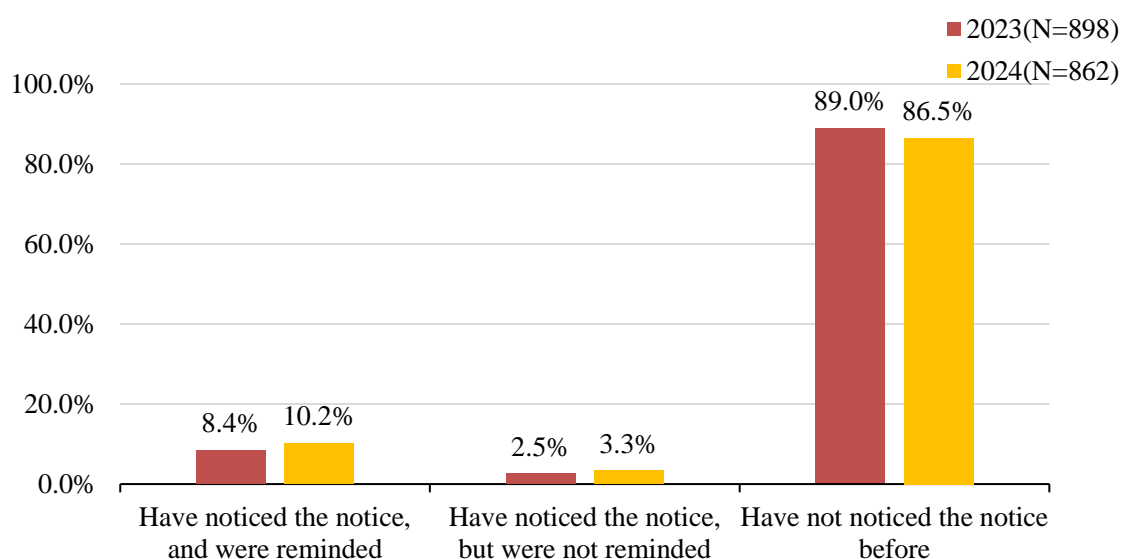

Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors and did not complete the whole course of treatment as instructed by doctor.
Question: A9 "The main reason that you did not complete the whole course of treatment is:"

5.1.7 Notices about "Do not purchase antibiotics without a prescription" posted at community pharmacies

As to whether respondents had noticed the notices about "Do not purchase antibiotics without a prescription" posted at community pharmacies, and if so, whether they found the notice helpful to remind them not to purchase antibiotics without doctor's prescription, the results for 2024 showed no significant difference from 2023 (Figure 5.1.7).

Figure 5.1.7: Whether respondents had noticed the notices about "Do not purchase antibiotics without a prescription" posted at community pharmacies by year (%)

Base(N): Persons aged 15 and over who have been to pharmacies and remember whether they have noticed the notice about 'Do not purchase antibiotics without a prescription'.
Question: A10"Some people might have seen notices about 'Do not purchase antibiotics without a prescription' posted at community pharmacies. On last visit to community pharmacy, did you see this notice? If yes, did the notice help to remind you not to purchase antibiotics without doctor's prescription?"

5.1.8　Whether respondents had consulted doctor(s) for cold or flu and requested antibiotics in the past 12 months

5.1.8.1 Whether respondents had consulted doctor(s) for cold or flu in the past 12 months

Respondents who had consulted doctors for cold or flu in the past 12 months markedly increased from 21.6% in 2022 to 45.9% in 2024. The results for 2024 were statistically significantly different from 2022, but not significantly different from 2023 (Figure 5.1.8.1).

Figure 5.1.8.1: Whether respondents had consulted doctor(s) for cold or flu in the past 12 months by year (%)
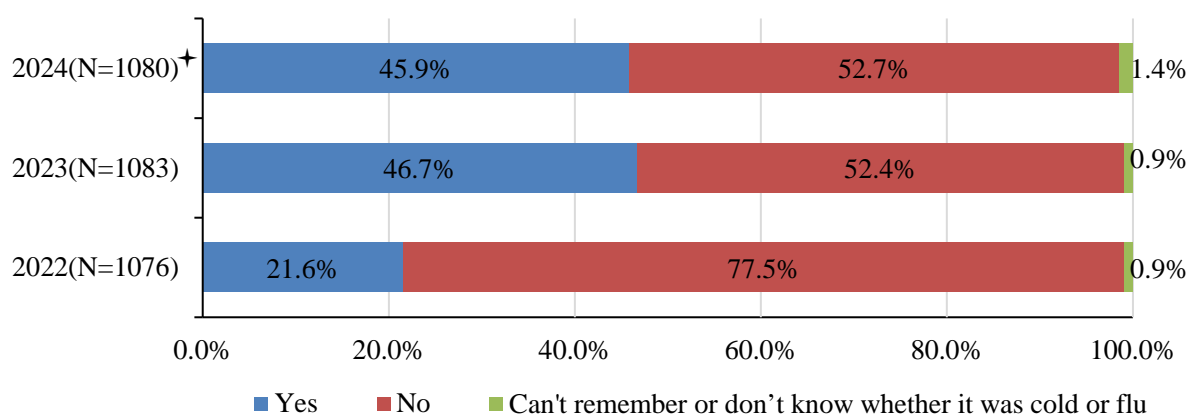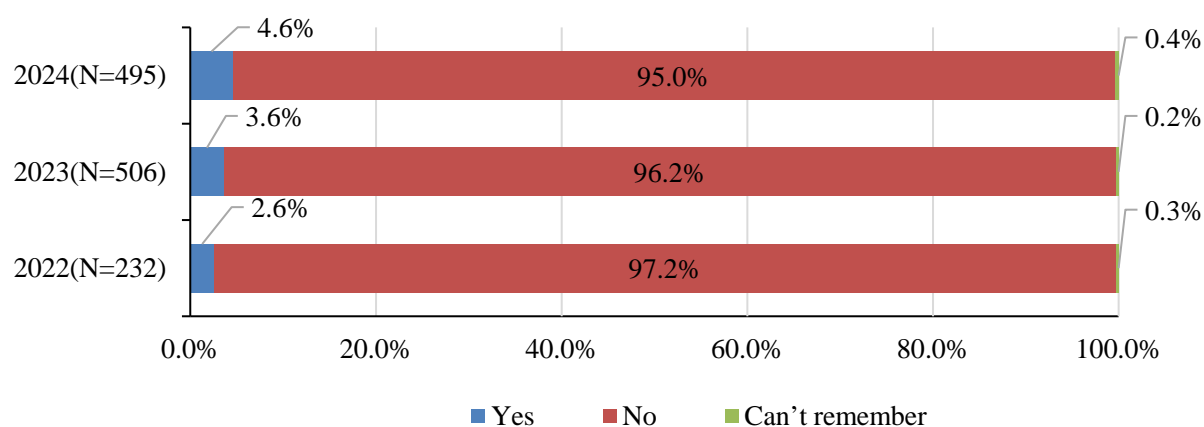

Base(N): Persons aged 15 and over.
Question: A11"In the past 12 months, had you consulted doctor(s) for cold or flu?"
Note:⁺There was a significant difference between 2024 and 2022 (***p<0.001).

5.1.8.2 Whether respondents had asked for antibiotics during the last medical consultation for cold or flu

As to whether respondents had asked for antibiotics during the last medical consultation for cold or flu, the results for 2024 were not statistically significantly different from those in 2022 or 2023 (Figure 5.1.8.2).

Figure 5.1.8.2: Whether respondents had asked for antibiotics during the last medical consultation for cold or flu by year (%)
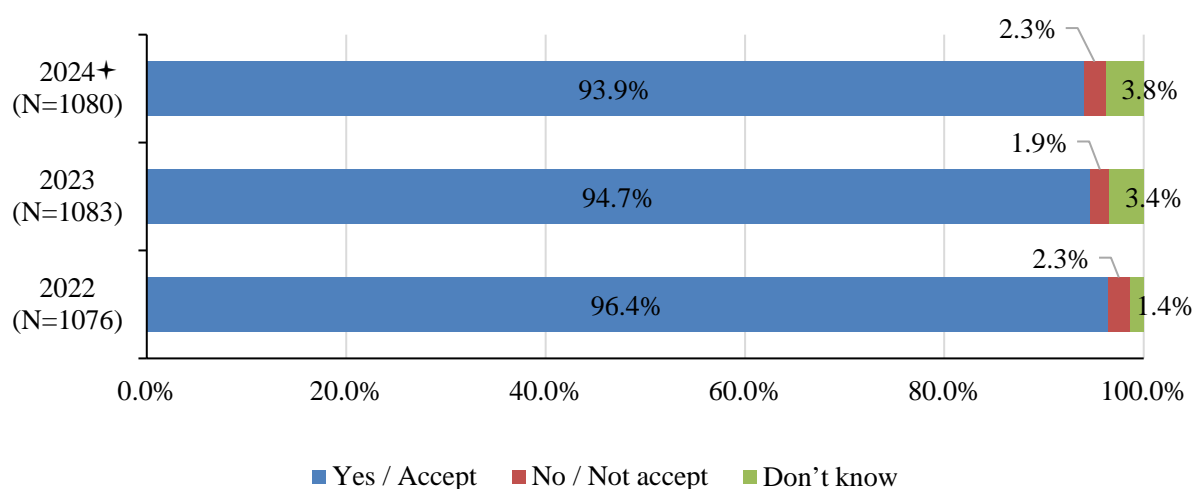

Base(N): Persons aged 15 and over who had consulted a doctor for cold or flu in the past 12 months.
Question: A12"Had you asked for antibiotics during that consultation?"

5.1.9 Whether respondents would accept the doctor's advice to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics or not

When doctor's initial assessment indicated that antibiotic was not needed at the moment, the proportion of respondents who would accept the doctor's advice to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics decreased from 96.4% in 2022 to 93.9% in 2024. The results for 2024 were statistically significantly different from 2022, but not significantly different from 2023 (Figure 5.1.9).

Figure 5.1.9: Whether respondents would accept the doctor's advice to observe for few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics or not by year (%)

Base(N): Persons aged 15 and over.
Question: A13 "When you consult a doctor and his / her initial assessment for you indicated that antibiotic is not needed at the moment, would you accept if the doctor tells you to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics or not?"
Note: + There was a significant difference between 2024 and 2022 (**p<0.01).

5.1.10 Whether respondents wanted doctors to share decision making with them on antibiotics prescription

The proportion of respondents who wanted doctors to share decision making with them on antibiotics prescription decreased from 66.3% in 2022 to 50.4% in 2024. The results for 2024 were statistically significantly different from 2022, but not significantly different from 2023 (Figure 5.1.10).

Figure 5.1.10: Whether respondents wanted doctors to share decision making with them on antibiotics prescription by year (%)
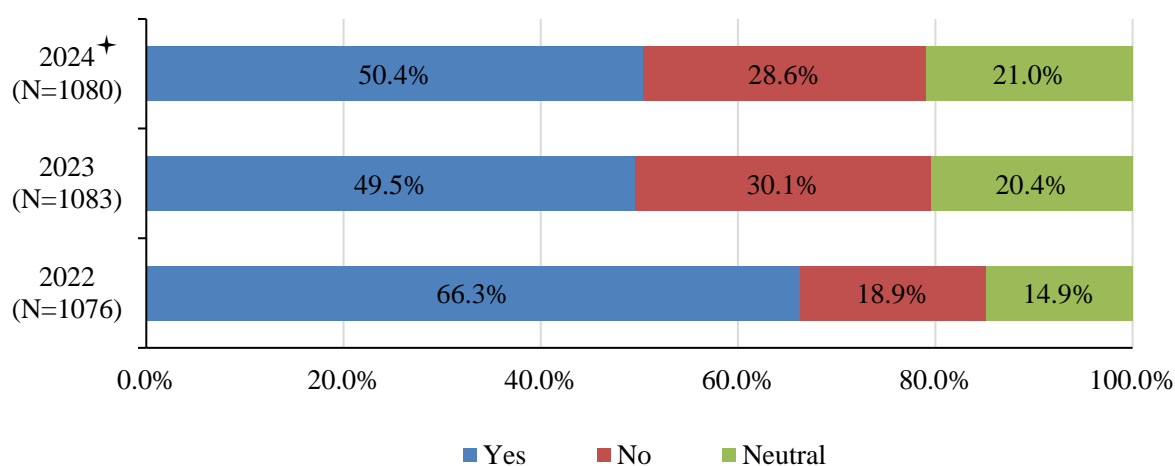
Base(N): Persons aged 15 and over.
Question: A14 "Do you want your doctor to share decision making with you on antibiotics prescription?"
Note: + There was a significant difference between 2024 and 2022 (***P<0.001).

5.1.11 Whether respondents preferred consulting doctors who would prescribe antibiotics more readily

As to whether respondents preferred consulting doctors who would prescribe antibiotics more readily, no statistically significant difference was found between 2022 and 2024, or between 2023 and 2024 (Figure 5.1.11).

Figure 5.1.11: Whether respondents preferred consulting doctors who would prescribe antibiotics more readily by year (%)
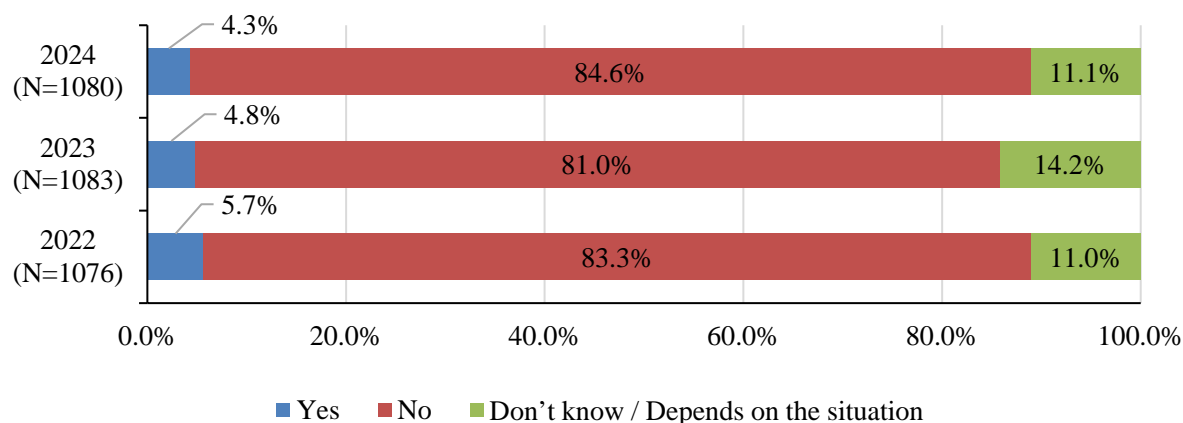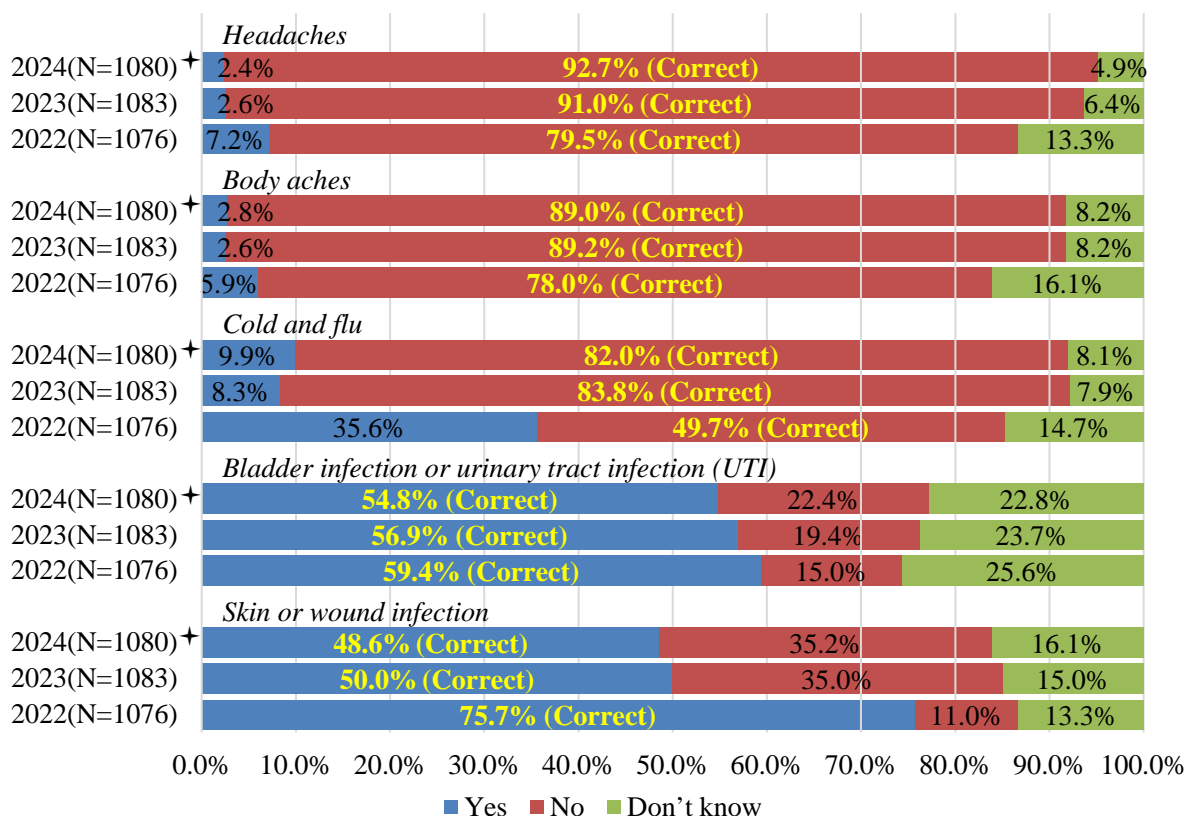

Base(N): Persons aged 15 and over.
Question: A15 "Do you prefer consulting doctors who prescribe antibiotics more readily?"

5.1.12 Whether respondents thought the selected health conditions need to use antibiotics

As to whether the selected health conditions need to be treated with antibiotics, the percentages of correct answers to cold and flu, body aches and headaches increased from 49.7%, 78.0% and 79.5% in 2022 to 82.0%, 89.0% and 92.7% in 2024 respectively, while the percentages of correct answers to bladder infection or urinary tract infection (UTI) and skin or wound infection decreased from 59.4% and 75.7% in 2022 to 54.8% and 48.6% in 2024 respectively. The results for 2024 were statistically significantly different from 2022, but not significantly different from 2023 (Figure 5.1.12).

Figure 5.1.12: Whether respondents thought the selected health conditions need to use^ antibiotics by year (%)

Base(N): Persons aged 15 and over.
Question in 2022: A13a-h "Do you think these conditions can be treated with antibiotics?"
Question in 2023 and 2024: A16a-e "Do you think these conditions need to use antibiotics?"
Note: +There was a significant difference between 2024 and 2022 (***p<0.001); ^ Caution should be taken when comparing the results, as some wording in the question has been changed in 2023.

5.1.13 Whether respondents had heard of the selected terms related to antimicrobial resistance

Statistically significant differences between 2022 and 2024 results were observed in the proportion of respondents who had heard of "Antibiotic resistance" and "Antimicrobial resistance": the percentage dropped respectively from 76.0% and 40.3% in 2022 to 70.9% and 23.9% in 2024. When compared with results in 2023, more respondents have heard of the terms "Drug-resistant bacteria" (from 66.6% to 70.4%), "Antibiotic resistance" (from 66.7% to 70.9%) and "Antimicrobial resistance" (from 22.6% to 23.9%) but there is no significant difference found (Figure 5.1.13).

Figure 5.1.13: Whether respondents had heard of the selected terms related to antimicrobial resistance by year (%)
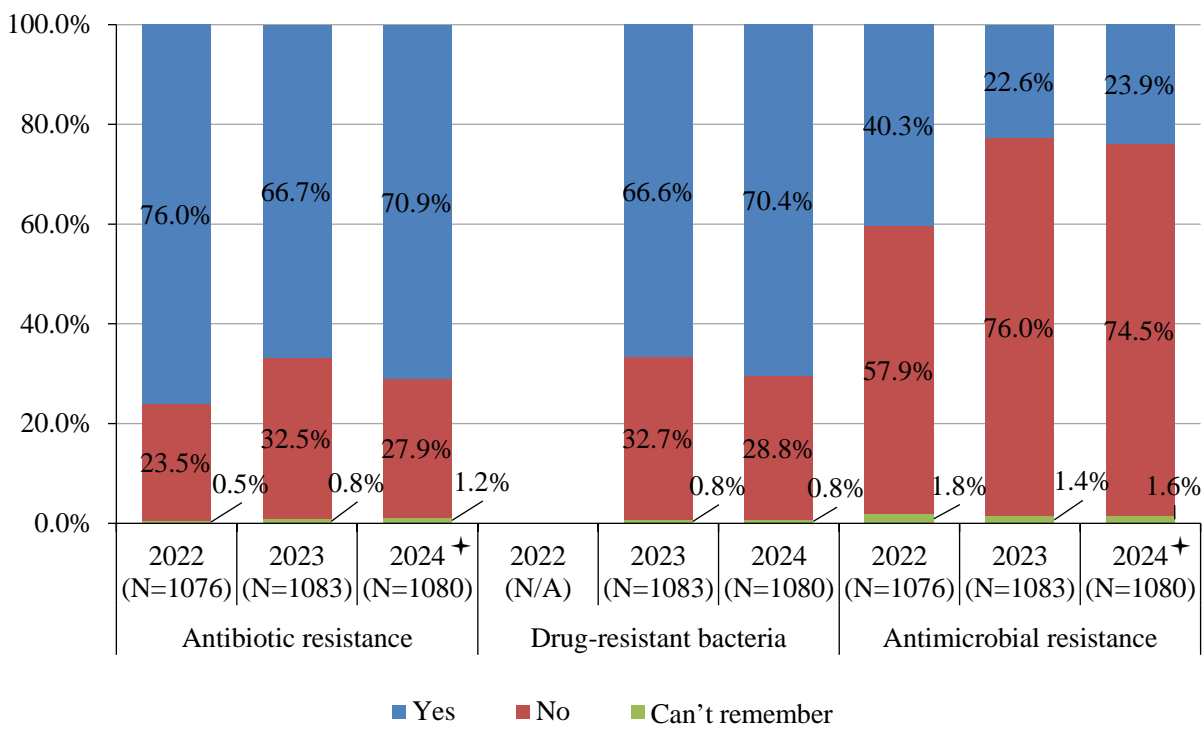
Base(N): Persons aged 15 and over.
Question: A17a-c "Have you heard of any of the following terms?"
Note: $^+$There was a significant difference between 2024 and 2022 (Antibiotic resistance: *$p<0.05$; Antimicrobial resistance: ***$p<0.001$).

5.1.14 Statements about antibiotic resistance

Among the 10 statements about antibiotic resistance, statistically significant differences between 2023 and 2024 were observed in the proportion of giving correct answers to 3 of them, namely A18b, A18g and A18j: the percentage increased from 79.6%, 73.7% and 71.2% in 2023 to 83.1%, 78.2% and 76.7% in 2024 respectively. Of note, the proportion of respondents who correctly identified that antibiotic-resistant bacteria could spread from person to person slightly increased from 39.2% in 2023 to 42.2% in 2024, although the difference was statistically insignificant. No statistically significant difference between 2022 and 2024 was found for all statements (Figure 5.1.14).

Figure 5.1.14: Whether respondents thought the selected statements about antibiotic resistance as true or false by year (%)
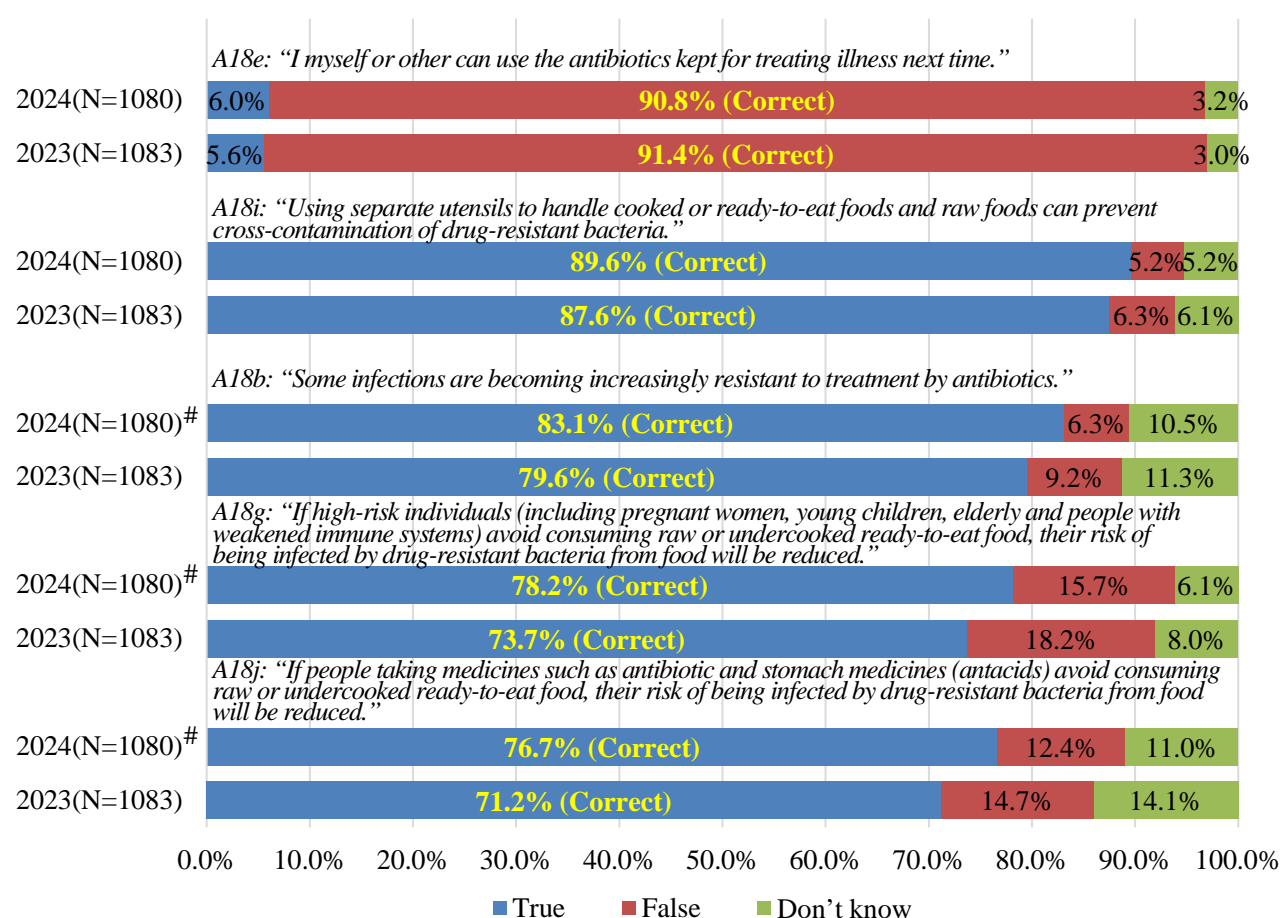
(to be continued)

Figure 5.1.14: Whether respondents thought the selected statements about antibiotic resistance as true or false by year (%) (continued)

A18f: *"Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria."*

	True	False	Don't know
2024(N=1080)	74.4% (Correct)	15.3%	10.3%
2023(N=1083)	71.1% (Correct)	16.2%	12.7%

A18h: *"Thorough cooking is effective to kill drug-resistant bacteria in food."*

	True	False	Don't know
2024(N=1080)	73.8% (Correct)	15.5%	10.7%
2023(N=1083)	71.4% (Correct)	17.3%	11.3%

A18c: *"If bacteria are resistant to antibiotics, it can be very difficult or impossible to treat the infections they cause."*

	True	False	Don't know
2024(N=1080)	67.7% (Correct)	19.6%	12.7%
2023(N=1083)	67.6% (Correct)	17.9%	14.5%
2022(N=1076)	71.4% (Correct)	16.7%	11.9%

A18a: *"Antibiotics are anti-inflammatory drugs."*

	True	False	Don't know
2024(N=1080)	25.8%	65.8% (Correct)	8.3%
2023(N=1083)	26.2%	65.1% (Correct)	8.7%

A18d: *"Bacteria which are resistant to antibiotics can be spread from person to person."*

	True	False	Don't know
2024(N=1080)	42.2% (Correct)	38.8%	19.0%
2023(N=1083)	39.2% (Correct)	39.1%	21.6%
2022(N=1076)	44.1% (Correct)	37.6%	18.2%

■ True ■ False ■ Don't know

Base(N): Persons aged 15 and over.
Question: A18a-j "Please indicate whether you think the following statements are 'true' or 'false'."
Note: #There was a significant difference between 2024 and 2023 (*p<0.05).

5.2   Further Analysis of the results among the Elderly

To better understand whether there are any changes in knowledge and awareness among the elderly from 2023 to 2024 after implementation of the health promotion campaign in 2024, a comparative analysis of the respondents aged 65 or above was conducted in this section.

5.2.1   Knowledge of antibiotics among the elderly

It was noted that there was improvement in knowledge on the correct health conditions that need to use antibiotics (e.g. cold and flu from 81.8% in 2023 to 83.6% in 2024) although it was not statistically significant. (Figure 5.2.1; Table 5.2.1).

Figure 5.2.1: Whether the elderly respondents thought the selected health conditions need to use antibiotics by year (%)
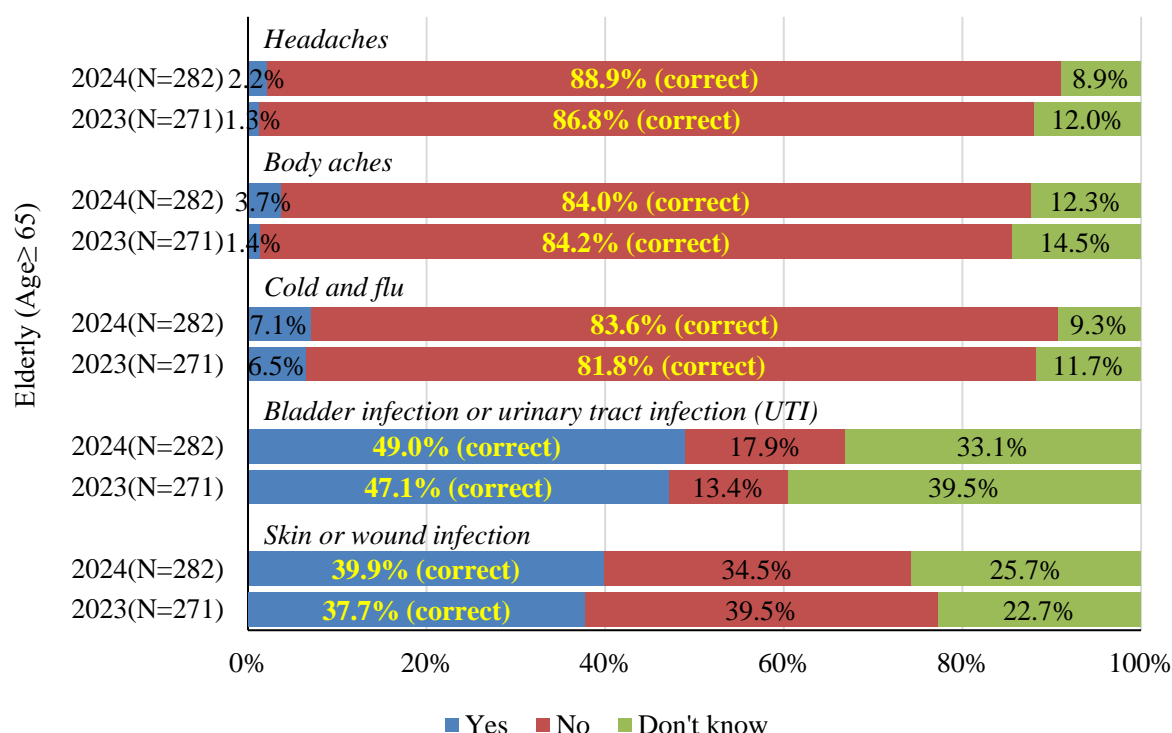
Base(N): Persons aged 65 and over.
Question: A16a-e "Do you think these conditions need to use antibiotics?"

74

Table 5.2.1: Whether the elderly respondents thought the selected health conditions need to use antibiotics by year (%)

	Elderly (Age ≥ 65)	
	2023	2024
Bladder infection or urinary tract infection (UTI)		
Yes (Correct)	47.1	49.0
No	13.4	17.9
Don't know	39.5	33.1
Sample size	(271)	(282)
p-value (Chi-Square)	0.172	
Cold and flu		
Yes	6.5	7.1
No (Correct)	81.8	83.6
Don't know	11.7	9.3
Sample size	(271)	(282)
p-value (Chi-Square)	0.651	
Skin or wound infection		
Yes (Correct)	37.7	39.9
No	39.5	34.5
Don't know	22.7	25.7
Sample size	(271)	(282)
p-value (Chi-Square)	0.447	
Body aches		
Yes	1.4	3.7
No (Correct)	84.2	84.0
Don't know	14.5	12.3
Sample size	(271)	(282)
p-value (Chi-Square)	0.192	

(To be continued)

Table 5.2.1: Whether the elderly respondents thought the selected health conditions need to use antibiotics by year (%) (Continued)
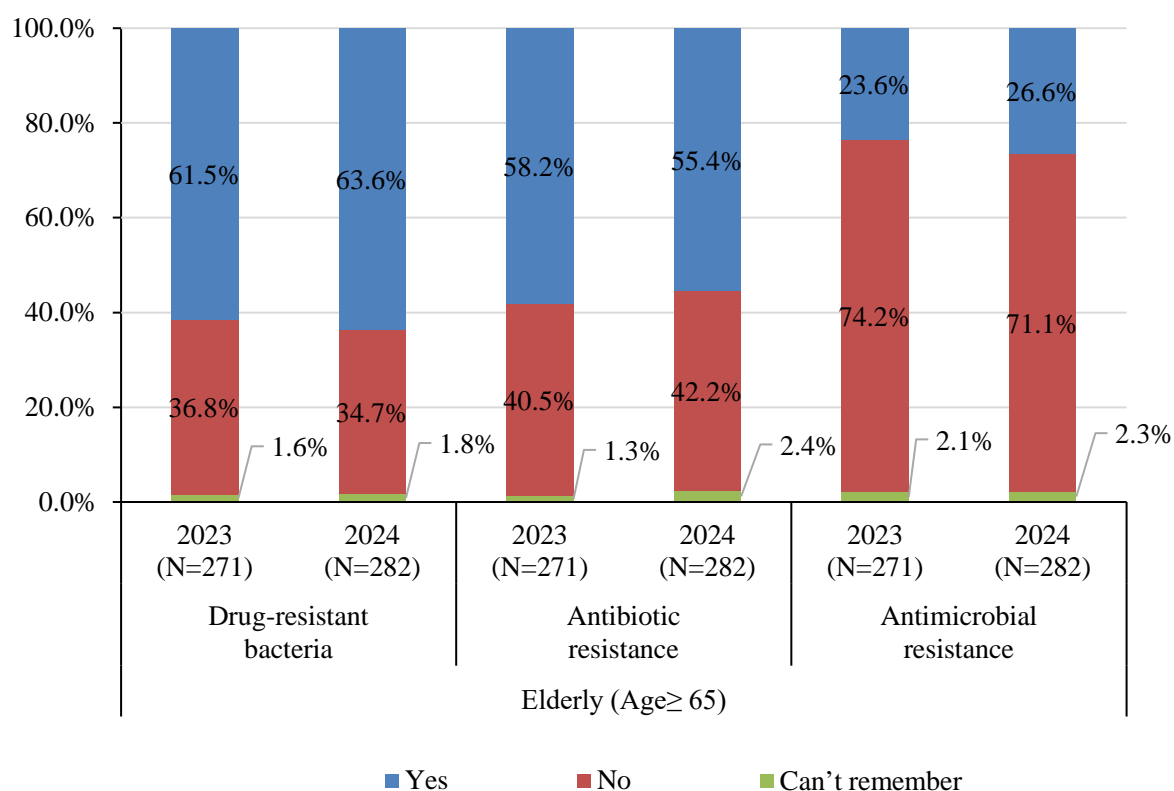
	Elderly (Age ≥ 65)	
	2023	2024
Headaches		
Yes	1.3	2.2
No (Correct)	86.8	88.9
Don't know	12.0	8.9
Sample size	(271)	(282)
p-value (Chi-Square)	0.368	

Question: A16a-e "Do you think these conditions need to use antibiotics?"

5.2.2 Awareness of the selected terms related to antimicrobial resistance among the elderly

There was no statistically significant difference between 2023 and 2024 in whether the elderly respondents had heard of the selected terms related to antimicrobial resistance (Figure 5.2.2; Table 5.2.2).

Figure 5.2.2: Whether the elderly respondents had heard of the selected terms related to antimicrobial resistance by year (%)

Base(N): Persons aged 65 and over.
Question: A17a-c "Have you heard of any of the following terms?"

Table 5.2.2: Whether the elderly respondents had heard of the selected terms related to antimicrobial resistance by year (%)

	Elderly (Age ≥ 65)	
	2023	2024
Drug-resistant bacteria		
Yes	61.5	63.6
No	36.8	34.7
Can't remember	1.6	1.8
Sample size	(271)	(282)
p-value (Chi-Square)	0.862	
Antibiotic resistance		
Yes	58.2	55.4
No	40.5	42.2
Can't remember	1.3	2.4
Sample size	(271)	(282)
p-value (Chi-Square)	0.559	
Antimicrobial resistance		
Yes	23.6	26.6
No	74.2	71.1
Can't remember	2.1	2.3
Sample size	(271)	(282)
p-value (Chi-Square)	0.712	

Question: A17a-c "Have you heard of any of the following terms?"

5.2.3 Judgement of the selected statements about antibiotic resistance among the elderly

There was statistically significant difference between 2023 and 2024 for the statement "If people taking medicines such as antibiotic and stomach medicines (antacids) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced", the correct percentage of the elderly increased from 61.5% in 2023 to 72.1% in 2024. Besides, it was also noted that a higher proportion of elderly respondents also answered correctly on "Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria" (from 62.8% in 2023 to 70.3% in 2024) although the difference was not statistically significant. No statistically significant difference between 2023 and 2024 was observed for the remaining statements about antibiotic resistance (Figure 5.2.3; Table 5.2.3).

Figure 5.2.3: Whether the elderly respondents thought the selected statements about antibiotic resistance as true or false by year (%)
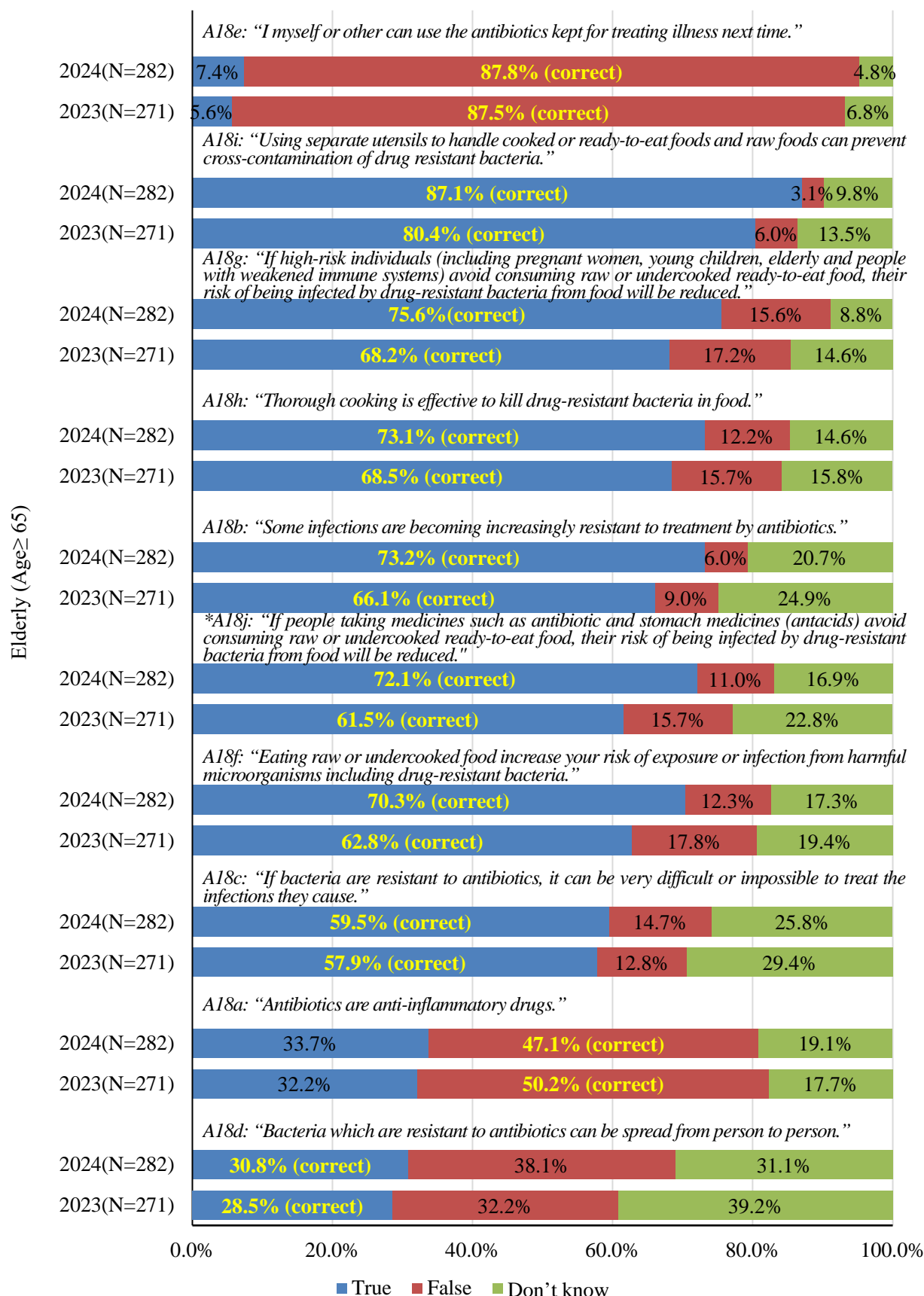
Base(N): Persons aged 65 and over.
Question: A18a-j "Please indicate whether you think the following statements are 'true' or 'false'."
*p<0.05, **p<0.01, ***p<0.001

Table 5.2.3: Whether the elderly respondents thought the selected statements about antibiotic resistance as true or false by year (%)

	Elderly (Age ≥ 65)	
	2023	2024
Antibiotics are anti-inflammatory drugs		
True	32.2	33.7
False (Correct)	50.2	47.1
Don't know	17.7	19.1
Sample size	(271)	(282)
p-value (Chi-Square)	0.769	
Some infections are becoming increasingly resistant to treatment by antibiotics		
True (Correct)	66.1	73.2
False	9.0	6.0
Don't know	24.9	20.7
Sample size	(271)	(282)
p-value (Chi-Square)	0.162	
If bacteria are resistant to antibiotics, it can be very difficult or impossible to treat the infections they cause		
True (Correct)	57.9	59.5
False	12.8	14.7
Don't know	29.4	25.8
Sample size	(271)	(282)
p-value (Chi-Square)	0.575	
Bacteria which are resistant to antibiotics can be spread from person to person		
True (Correct)	28.5	30.8
False	32.2	38.1
Don't know	39.2	31.1
Sample size	(271)	(282)
p-value (Chi-Square)	0.121	

(To be continued)

Table 5.2.3: Whether the elderly respondents thought the selected statements about antibiotic resistance as true or false by year (%) (Continued)

	Elderly (Age ≥ 65)	
	2023	2024
I myself or other can use the antibiotics kept for treating illness next time		
True	5.6	7.4
False (Correct)	87.5	87.8
Don't know	6.8	4.8
Sample size	(271)	(282)
p-value (Chi-Square)	0.434	
Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria		
True (Correct)	62.8	70.3
False	17.8	12.3
Don't know	19.4	17.3
Sample size	(271)	(282)
p-value (Chi-Square)	0.119	
If high-risk individuals (including pregnant women, young children, elderly and people with weakened immune systems) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced		
True (Correct)	68.2	75.6
False	17.2	15.6
Don't know	14.6	8.8
Sample size	(271)	(282)
p-value (Chi-Square)	0.075	

(To be continued)

Table 5.2.3: Whether the elderly respondents thought the selected statements about antibiotic resistance as true or false by year (%) (Continued)

	Elderly (Age ≥ 65)	
	2023	2024
Thorough cooking is effective to kill drug-resistant bacteria in food		
True (Correct)	68.5	73.1
False	15.7	12.2
Don't know	15.8	14.6
Sample size	(271)	(282)
p-value (Chi-Square)	0.416	
Using separate utensils to handle cooked or ready-to-eat foods and raw foods can prevent cross-contamination of drug-resistant bacteria		
True (Correct)	80.4	87.1
False	6.0	3.1
Don't know	13.5	9.8
Sample size	(271)	(282)
p-value (Chi-Square)	0.084	
If people taking medicines such as antibiotic and stomach medicines (antacids) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced		
True (Correct)	61.5	72.1
False	15.7	11.0
Don't know	22.8	16.9
Sample size	(271)	(282)
p-value (Chi-Square)	0.030*	

Question: A18a-j "Please indicate whether you think the following statements are 'true' or 'false'."
*p<0.05, **p<0.01, ***p<0.001

6.   Conclusion and Recommendations

6.1   Conclusion

6.1.1   Use of antibiotics

In the 2024 survey, over one-third (36.0%) of all respondents last took antibiotics within the past year, increased by 9.9 percentage points compared with 2022 (26.1%). The majority (96.3%) of those who had taken antibiotics reported that their last taken antibiotics were prescribed by doctors. Significantly lower proportion of (from 62.2% in 2023 to 56.6% in 2024) respondents of this subgroup obtained their antibiotics last taken from private clinics. For those whose last taken antibiotics were not or could not remember if prescribed by doctors, the major source of antibiotics was medical store or pharmacy (55.1%).

Nearly half (45.9%) of all respondents had consulted doctor(s) for cold or flu in the past 12 months before enumeration, increased significantly from 2022 (21.6%). A vast majority (95.0%) of those who had consulted doctor(s) for cold or flu in the past 12 months did not request antibiotics during that consultation.

A majority (93.3%) of respondents whose antibiotics last taken were prescribed by doctors completed the whole course of treatment as instructed by doctor. For those who did not complete the whole course of treatment as instructed by doctor, improvement of symptoms (56.2%) remained to be the most common reason for not completing the treatment in the 2024 survey.

6.1.2 Awareness of the health advice printed on antibiotics medicine bag and the frequency of practising the health advice

A fifth (20.4%) of respondents whose antibiotics last taken were prescribed by doctors reported that they had noticed the health advice on antibiotics medicine bags. Among them, 82.0% considered the advice helpful in reminding them to be aware of and maintain personal hygiene.

Of those whose antibiotics last taken were prescribed by doctors in the 2024 survey, the proportion of always or seldom practising the following health advice when handling or taking antibiotics in daily life during the last medication period are listed below:

  a. Eat or drink only thoroughly cooked or boiled items: 97.6% (always: 91.4%; seldom: 6.1%);

  b. Wear surgical mask if you have respiratory symptoms: 95.1% (always 74.5%; seldom: 20.6%);

  c. Disinfect and cover all wounds: 91.8% (always 63.7%; seldom: 28.1%);

  d. Young children with symptoms of infections should minimise contact with other children: 91.3% (always: 76.9%; seldom: 14.4%), and;

  e. Practise frequent hand hygiene: 85.2% (always 59.5%; seldom: 25.6%).

The proportion of always or seldom wearing surgical masks when they have respiratory symptoms when handling or taking antibiotics in daily life during the last medication period increased significantly from 87.5% (always: 72.3%; seldom: 15.2%) in 2022 to 95.1% (always: 74.5%; seldom: 20.6%) in 2024.

In addition, the proportion of always or seldom eating and drinking only thoroughly cooked or boiled items when handling or taking antibiotics in daily life during the last medication period increased significantly from 96.5% (always: 89.6%; seldom: 7.0%)

in 2023 to 97.6% (always: 91.4%; seldom:6.1%) in 2024.

6.1.3 Awareness of the notices about "Do not purchase antibiotics without a prescription" posted at community pharmacies

When asked whether they had noticed the notices about "Do not purchase antibiotics without a prescription" posted at community pharmacies, and if so, whether they found the notice helpful to remind them not to purchase antibiotics without doctor's prescription, 13.5% of those who had been to pharmacies and remembered whether they had noticed the notice said that they had noticed the notices (noticed and were reminded:10.2%; noticed but were not reminded: 3.3%) and another 86.5% said they had not.

6.1.4 Knowledge, awareness and attitude

When doctor's initial assessment indicated that antibiotic was not needed at the moment, the proportion of respondents who would accept the doctor's advice to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics decreased from 96.4% in 2022 to 93.9% in 2024.

The majority (84.6%) of all respondents did not prefer consulting doctors who prescribed antibiotic more readily. It was noted that there was a statistically significant decrease in the proportion of respondents who wanted their doctors to share decision making with them on antibiotics prescription from 66.3% in 2022 to 50.4% in 2024.

In addition to attitudes, the survey also assessed respondents' knowledge about antibiotics. The percentages of respondents who could correctly identify which health conditions needed to use antibiotics are listed below:[3]

    a.   Headaches (No: 92.7%);

    b.   Body aches (No: 89.0%);

    c.   Cold and flu (No: 82.0%);

    d.   Bladder infection or urinary tract infection (UTI) (Yes: 54.8%); and

    e.   Skin or wound infection (Yes: 48.6%).

- In particular, the majority of the respondents correctly answered that cold and flu does not need to be treated by antibiotics, which was comparable to 83.8% in 2023 (with no statistically significant difference), and had maintained at a high level when compared to 49.7% in 2022.

- Besides, the percentages of correct answers to body aches and headaches increased from 78.0% and 79.5% in 2022 to 89.0% and 92.7% in 2024 respectively, while the percentages of correct answers to bladder infection or urinary tract infection (UTI) and skin or wound infection decreased from 59.4% and 75.7% in 2022 to 54.8% and 48.6% in 2024 respectively.

- Respondents aged 65 or above were less likely to give correct answers to skin or wound infection and headaches, while those aged between 45 and 54 were less likely to give correct answer to bladder infection or urinary tract infection (UTI).

While not statistically significant, more respondents have heard of the terms "drug-resistant bacteria" (耐藥性細菌) (from 66.6% to 70.4%), "antibiotic resistance" (抗生

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[3] The 2023 and 2024 survey asked whether the selected health conditions needed to use antibiotics, while the 2022 survey asked whether selected health conditions could be treated with antibiotics.

素耐藥性) (from 66.7% to 70.9%) and "antimicrobial resistance" (抗菌素耐藥性) (from 22.6% to 23.9%) when compared with 2023.

In general, the respondents have fairly good knowledge of antimicrobial resistance as reflected by the percentages who correctly identified the following statements about antibiotic resistance:

    a.   I myself or other can use the antibiotics kept for treating illness next time (False: 90.8%);

    b.   Using separate utensils to handle cooked or ready-to-eat foods and raw foods can prevent cross-contamination of drug-resistant bacteria (True: 89.6%); and

    c.   Some infections are becoming increasingly resistant to treatment by antibiotics (True: 83.1%).

There is room for improvement in public awareness of the risk of AMR in food:

    a.   If high-risk individuals (including pregnant women, young children, elderly and people with weakened immune systems) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced (True: 78.2%);

    b.   If people taking medicines such as antibiotic and stomach medicines (antacids) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced (True: 76.7%);

    c.   Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria (True: 74.4%); and

d. Thorough cooking is effective to kill drug-resistant bacteria in food (True: 73.8%).

- Those aged 55 to 64 and those aged 65 or above were the two age groups that were less likely to correctly indicate whether the selected statements were true or false. Both age groups had the lowest percentage of correct answers to 4 statements each.

- Significant differences between 2023 and 2024 were observed for 3 statements:

    a. Some infections are becoming increasingly resistant to treatment by antibiotics (79.6% in 2023; 83.1% in 2024);

    b. If high-risk individuals (including pregnant women, young children, elderly and people with weakened immune systems) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced (73.7% in 2023; 78.2% in 2024); and

    c. If people taking medicines such as antibiotic and stomach medicines (antacids) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced (71.2% in 2023; 76.7% in 2024).

6.1.5 Knowledge and awareness of the elderly

The comparative analysis indicated a significant increase in the percentage of correct answer among the elderly respondents to the statement "If people taking medicines such as antibiotic and stomach medicines (antacids) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced" from 61.5% in 2023 to 72.1% in 2024.

Despite the fact that no statistically significant difference was found between 2023 and 2024 for other selected questions, some improvements were found. For instance, that cold and flu does not need to be treated by antibiotics (from 81.8% to 83.6%), and that eating raw or undercooked food will increase one's risk of exposure or infection from harmful microorganisms including drug-resistant bacteria (from 62.8% to 70.3%).

6.2   Recommendations

1. Only about half of the respondents correctly answered that bladder infection or urinary tract infection (UTI), and skin or wound infection need to use antibiotics. Public health education needs to focus on identifying whether common health conditions need to be treated with antibiotics.

2. Only around two-fifths of the respondents knew that bacteria resistant to antibiotics could be spread from person to person. Health promotion should reinforce the idea that drug-resistant bacteria can spread as easily as other bacteria from person to person, and that proper infection measures can prevent its spread.

3. Of those who had been to pharmacies and remembered whether they had noticed the notice about "Do not purchase antibiotics without a prescription" posted at community pharmacies, over four-fifths reported that they had not noticed the notices. In addition, only a fifth of the respondents whose last taken antibiotics were prescribed by doctors noticed the health advice on antibiotics medicine bags. This reflects that these measures may not be reaching its target audience effectively, and may need to be strengthened.

4. Although comparative analysis of the 65 or above age group showed improvement in some aspects of knowledge this year, knowledge deficit was still present in both the 55 to 64 and the 65 or above age groups. Measures should be taken to targeted health promotion activities towards these age groups.

5. Compared to the 2023 survey, there were improvements in the percentage of respondents having heard of the terms "Antibiotic Resistance" (抗生素耐藥性) (from 66.7% to 70.9%), "Drug-resistant bacteria" (耐藥性細菌) (from 66.6% to 70.4%), and "Antimicrobial Resistance" (抗菌素耐藥性) (from 22.6% to 23.9%). To further enhance the public's

knowledge and awareness of antimicrobial resistance, more intensive health education and promotion activities should be conducted through easy-to-understand and impactful media channels.

6. This survey also revealed that only half of the respondents wanted their doctors to share decision making with them on antibiotics prescription, but the majority would accept doctor's advice to observe for a few more days before deciding whether to prescribe antibiotics when the initial assessment indicated that antibiotics were not needed. Given their role in continuity of care, primary care doctors are in the best position to minimize the spread of antibiotic resistance by practising antibiotic stewardship and educating patients about the importance of using antibiotics safely and appropriately.

6.3   Limitations

1. Landline surveys could not reach households without landline telephones while the number of residential landlines in Hong Kong has kept on decreasing in recent years. In order to reduce the over- or under-representation of different groups in the population, this project employed dual-frame telephone sampling and weighted the data by the distribution of age and gender.

2. Selection bias and response bias exist – this study did not account for the views of the following groups:

    (a) elderly who resided in residential care homes and did not have mobile phones. Hence, those older people were underrepresented and the findings may not be fully representative of the older population in Hong Kong.

    (b) subjects who declined the interview may have different views from those who agreed to be interviewed.

3. The 2023 and 2024 surveys were conducted around cold and flu season which may affect the health seeking behaviour of people. Comparison of the results of the 2023 and 2024 surveys to the previous one during non-cold and flu season from September to October 2022 should be cautious.

4. Since the survey was conducted by means of telephone interview, it was impracticable to use visual aids. For example, it was not possible to show the sample of antibiotics medicine bag when asking respondents whether they had noticed the health advice printed on it.

5. The data of the survey were self-reported by the respondent and verification of their answers was infeasible.

<div align="center">(END)</div>

公眾對抗生素耐藥性認知、態度及行為調查 2024

General Public's Knowledge, Attitude and Practice Survey on
Antibiotic Resistance 2024

GENDER　受訪者性別　Respondent's gender:

   1. 男 Male   2. 女 Female

AGE「請問你屬於以下邊個年齡組別呢？係15至24、25至34，35至44、45至54、55至64，定係65歲或以上呢？」
"Which of the following age groups do you belong to? 15 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, or 65 or above?"

   1. 15至24歲   [15 to 24]
   2. 25至34歲   [25 to 34]
   3. 35至44歲   [35 to 44]
   4. 45至54歲   [45 to 54]
   5. 55至64歲   [55 to 64]
   6. 65歲或以上   [65 or above]
   9. 拒絕回答   [Refused to answer]　【問卷結束】【Interview ends】

「我想了解吓你使用抗生素嘅情況同埋你對使用抗生素嘅睇法。抗生素係用嚟殺死細菌或令佢地停止繁殖嘅藥物。唔同種類嘅抗生素可用作治療唔同嘅細菌感染。」
"Next, I'd like to know about your use of antibiotics and your view on the use of antibiotics. Antibiotics are defined as drugs used to kill bacteria or stop them from multiplying. Different kinds of antibiotics can be used to treat different bacterial infections."

A1「請問你對上一次使用抗生素係幾時呢？」【讀出1-6】

"When did you last take antibiotics?"【Read 1-6】

1. 過去30日內 [In the past 30 days]　　　　【續問A2】【continue with A2】
2. 過去三個月內 [In the past 3 months]　　　【續問A2】【continue with A2】
3. 過去半年內 [In the past half year]　　　　【續問A2】【continue with A2】
4. 過去一年內 [In the past year]　　　　　　【續問A2】【continue with A2】
5. 超過一年之前 [More than a year ago]　　　【續問A2】【continue with A2】
6. 從未使用過 [Never]　　　　　　　　　　　【跳問A10】【skip to A10】
9. 唔記得 [Can't remember]　　　　　　　　【跳問A10】【skip to A10】

【訪問員注意：若受訪者不清楚／不知道對上一次所使用的藥物是否抗生素，可要求受訪者憑印象回答。】

【Note to interviewer: If the respondent is unclear / unsure whether the last medication used was an antibiotic, the respondent can be asked to answer the question by impression.】

【訪問員注意：若受訪者回答「唔記得」，追問對上一次使用抗生素係唔係「超過一年之前」。】

【Note to interviewer: If the respondent answers "Can't remember", the respondent can be asked "Was it more than a year ago?"】

【只問有使用過抗生素（A1=1-5）的受訪者】

【Ask those who has taken antibiotics（A1=1-5）only】

A2「嗰次使用嘅抗生素係唔係由醫生(包括牙醫)開嘅呢？」

"On that occasion, were the antibiotics prescribed by doctors (including dentists)?"

1. 係 [Yes]　　　　　　　　　【跳問A4】【skip to A4】
2. 唔係 [No]　　　　　　　　　【續問A3】【continue with A3】
9. 唔記得 [Can't remember]　【續問 A3】【continue with A3】

【只問抗生素唔係由醫生開/唔記得（A2=2/9）的受訪者】

【Ask those whose last taken antibiotics were not prescribed by a doctor or who could not remember whether they were prescribed by a doctor（A2=2/9）only】

A3 「咁嗰次你喺邊度得到抗生素？」【讀出1-5】

"On that occasion, where did you get the antibiotics?"【Read 1-5】

1. 藥店或藥房 [Medical store or pharmacy]
2. 網上 [The internet]
3. 朋友或屋企人 [Friend or family member]
4. 我之前食剩嘅 [Leftover from before]
5. 其他地方或其他人得到嘅（請註明）[Somewhere / someone else (please specify)]
9. 唔記得 [Can't remember]

【此題完成後跳問 A10】【Skip to A10 after this question】

【只問抗生素由醫生開（A2=1）的受訪者】

【Ask those whose antibiotics was prescribed by a doctor (A2=1) only】

A4「咁嗰次喺邊類嘅診所或醫院得到抗生素呢？」【讀出1-6】

"On that occasion, from which type of clinic or hospital did you get the antibiotics?"【Read 1-6】

1. 私家診所（包括醫生診所及牙科診所）

[**Private clinics** (including western medicine clinics and dental clinics)]

2. 醫院管理局轄下診所（包括普通科門診、設於醫管局轄下醫院嘅專科門診、以及醫管局轄下醫院嘅牙科診所）

[**Clinics under the Hospital Authority** (including general outpatient clinics, specialist outpatient clinics in hospitals under the Hospital Authority, and dental clinics in hospitals under the Hospital Authority)]

3. 衞生署轄下診所（包括長者健康中心、公務員診所、胸肺服務診所、皮膚科診所、社會衞生科診所、及牙科診所）

[**Clinics under the Department of Health** (including Elderly Health Centres, Families Clinics (for civil servant), Chest Clinics, Dermatological Clinics, Social Hygiene Clinics, and Dental Clinics)]

4. 其他診所（包括資助機構或慈善團體轄下診所等）

[**Other clinics** (including clinics under subsidised organisations or charities, etc.)]

5. 私家醫院 [**Private hospitals**]
6. 醫院管理局轄下醫院 [**Hospitals under the Hospital Authority**]
7. 其他（註明）[Others (please specify)]
9. 唔記得 [Can't remember]

【只問抗生素由醫生開（A2=1）的受訪者】

【Ask those whose antibiotics was prescribed by a doctor (A2=1) only】

A5「咁嗰次你有冇見到抗生素藥袋上有叫人注意個人衛生嘅指示呢？」

"On that occasion, did you notice there are instructions on personal hygiene on the antibiotics medicine bags?"

  1. 有 [Yes]   【續問A6】【continue with A6】

  2. 冇 [No]   【跳問A7】【skip to A7】

9. 唔記得 [Can't remember] 【跳問A7】【skip to A7】

【只問有見到抗生素藥袋上有叫人注意個人衞生嘅指示（A5=1）的受訪者】

【Ask those who noticed the instructions on personal hygiene on the antibiotics medicine bags (A5=1) only】

A6「咁呢啲指示有冇幫助提醒你更留意和注重個人衞生呢？」

"Were these instructions helpful to remind you to be aware of and maintain personal hygiene?"

  1. 有幫助 [Yes]

  2. 冇幫助 [No]

【只問抗生素由醫生開（A2=1）的受訪者】

【Ask those whose antibiotics was prescribed by a doctor (A2=1) only】

A7 「咁喺嗰次嘅整個抗生素療程期間，你喺日常生活處理或使用抗生素時，有幾經常做以下嘅行為呢？你可以回答『經常』、『間中』，同『冇』三個答案。」

"On that occasion, how often did you practise the following when you handled or took antibiotics in your daily life during the medication period? 'Always', 'Seldom' or 'Never'?"

A7a 「『時刻保持手部衛生』。係經常、間中，定係冇咁做呢？」

"'Practise frequent hand hygiene'"

  1. 經常 [Always]   9. 唔記得 [Can't remember]

  2. 間中 [Seldom]

  3. 冇 [Never]

A7b 「『喺飲食時，食水和食物必須徹底煮沸及煮熟』。係經常、間中，定係冇咁做呢？」
"'Eat or drink only thoroughly cooked or boiled items'"

    1. 經常 [Always]   9. 唔記得 [Can't remember]

    2. 間中 [Seldom]

    3. 冇 [Never]

A7c 「『當出現傷口時，會消毒及覆蓋所有傷口』。係經常、間中，定係冇咁做呢？」
"'Disinfect and cover all wounds'"

    1. 經常 [Always]   9. 唔記得 [Can't remember]

    2. 間中 [Seldom]   0. 不適用 [Not applicable]

    3. 冇 [Never]

A7d 「『當有呼吸道感染病徵時，戴上外科口罩』。係經常、間中，定係冇咁做呢？」
"'Wear surgical mask if you have respiratory symptoms'"

    1. 經常 [Always]   9. 唔記得 [Can't remember]

    2. 間中 [Seldom]   0. 不適用 [Not applicable]

    3. 冇 [Never]

A7e 「『如家中嘅幼童出現傳染病病徵，會盡可能減少接觸其他兒童』。係經常、間中，定係冇咁做呢？」
"'Young children with symptoms of infections should minimise contact with other children'"
【幼童指12歲或以下】[Young Children refer to those aged 12 or below]

    1. 經常 [Always]   9. 唔記得 [Can't remember]

    2. 間中 [Seldom]   0. 不適用（家中沒有幼童）[No young child at home]

    3. 冇 [Never]

【只問抗生素由醫生開（A2=1）的受訪者】

【Ask those whose antibiotics was prescribed by a doctor (A2=1) only】

A8 「咁嗰次你使用抗生素嘅時候，有冇依照醫生指示完成整個療程？」

"On that occasion, did you complete the whole course of treatment as instructed by doctor?"

【訪問員注意：如受訪者尚未完成整個療程，但會依照醫生指示完成，輸入「1」】

【Note to interviewer: Enter '1' if the respondent has not yet completed the current course of treatment but plans to complete】

        1. 有 [Yes]　　　　　　　　【跳問A10】【skip to A10】

        2. 冇 [No]　　　　　　　　　【續問A9】【continue with A9】

        9. 唔記得 [Can't remember]　【跳問A10】【skip to A10】

【只問沒有依照醫生指示完成整個療程（A8=2）的受訪者】

【Ask those whose did not complete the whole course of treatment as instructed by doctor (A8=2) only】

A9 「你冇完成整個抗生素療程最主要嘅原因係：」【讀出1-4】

"The main reason that you did not complete the whole course of treatment is:" 【Read 1-4】

        1. 病徵好轉 [Symptoms improve]

        2. 抗生素有副作用 [Presence of side effects due to antibiotics]

        3. 忘記食藥 [Forget to take medicine]

        4. 遺失藥物 [Lost the medicine]

        9. 其他原因（請註明）[Other reasons (please specify)]

A10「藥房有「切勿在沒有處方下自行購買抗生素」嘅告示，有人留意到亦有人無留意，咁最近一次你去藥房時，有冇見到依個告示呢？」

【訪問員注意：如果有的話，再追問：「呢啲告示有冇提醒到你在沒有醫生處方下不應自行購買抗生素？」】

"Some people might have seen notices about 'Do not purchase antibiotics without a prescription' posted at community pharmacies. On last visit to community pharmacy, did you see this notice?"

【Note to interviewer: If yes, ask "Did the notice help to remind you not to purchase antibiotics without doctor's prescription?"】

        1. 有見過、有提醒到 [Have noticed the notice, and were reminded]

        2. 有見過、冇提醒到 [Have noticed the notice, but were not reminded]

        3. 冇見過呢啲告示 [Have not noticed the notice before]

        9. 最近沒有去過藥房/ 唔記得 [Recently have not been to a pharmacy/ Can't remember]

A11 「喺過去十二個月內，你有冇因為傷風或流行性感冒而睇過醫生？」
"In the past 12 months, had you consulted doctor(s) for cold or flu?"

　　　1. 有 [Yes]　　　　　　　　　　【續問A12】【continue with A12】
　　　2. 冇 [No]　　　　　　　　　　【跳問 A13】【skip to A13】
　　　9. 唔記得或不知道是否傷風或流行性感冒 【跳問 A13】【skip to A13】
　　　　 [Can't remember or don't know whether it was cold or flu]

【只問過去十二個月內有因為傷風／流行性感冒而睇過醫生（A11=1）的受訪者】
【Ask those who consulted doctor(s) for cold or flu in the past 12 months (A11=1) only】
A12 「嗰次睇醫生你有冇要求醫生開抗生素呢？」
"Had you asked for antibiotics during that consultation?"

　　　1. 有 [Yes]　　　　　　9. 唔記得 [Can't remember]
　　　2. 冇 [No]

A13「當你睇醫生嘅時候，如果醫生認為你嘅病暫時唔需要使用抗生素，叫你觀察多一段時間，或者等埋測試結果先決定開唔開抗生素，你接唔接受呢？」
"When you consult a doctor and his / her initial assessment for you indicated that antibiotic is not needed at the moment, would you accept if the doctor tells you to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics or not?"

　　　1. 會／接受 [Yes / Accept]　　　　8. 唔知道 [Don't know]
　　　2. 唔會／唔接受 [No / Not accept]

A14「醫生開藥之前，你想唔想醫生同你一齊商量使唔使開抗生素呢？」

"Do you want your doctor to share decision making with you on antibiotics prescription?"

【訪問員注意：如受訪者答「醫生決定使唔使開抗生素」，可向受訪者作簡單解釋：「咁你自己想唔想醫生同你一齊商量使唔使開抗生素？」】

【Note to interviewer: If the respondent answers "Doctors make decision on antibiotics prescription", please briefly explain to the respondent: "Do you (yourself) want the doctor to share decision making with you on antibiotics prescription?"】

    1. 想 [Yes]   7. 冇意見 [Neutral]

    2. 唔想 [No]

A15「你會唔會選擇向較輕易開抗生素嘅醫生求醫呢？」

"Do you prefer consulting doctors who prescribe antibiotics more readily?"

    1. 會 [Yes]

    2. 唔會 [No]

    8. 唔知道／視乎情況而定 [Don't know / Depends on the situation]

A16「你覺得以下情況係唔係需要用抗生素？」

"Do you think these conditions need to use antibiotics?"

【訪問員注意：若受訪者表示疑惑，可向受訪者簡單解釋：「你只需要以你嘅認知回答就可以。」】

【Notes to interviewer: If the respondent expresses doubt, please briefly explain to the respondent: "You may answer the questions based on what you know."】

【A16a至A16e會隨機顯示。】 [Questions A16a to A16e will be displayed randomly.]

A16a 「『膀胱或泌尿道感染，即係尿道炎』，係唔係需要用抗生素呢？」

"Bladder infection or urinary tract infection (UTI)"

    1. 需要 [Yes]   8. 唔知道 [Don't know]

    2. 唔需要 [No]

A16b 「『傷風感冒』，係唔係需要用抗生素呢？」
"Cold and flu."

1. 需要 [Yes]   8. 唔知道 [Don't know]
2. 唔需要 [No]

A16c 「『皮膚或傷口感染發炎』，係唔係需要用抗生素呢？」
"Skin or wound infection"

1. 需要 [Yes]   8. 唔知道 [Don't know]
2. 唔需要 [No]

A16d 「『周身骨痛』，係唔係需要用抗生素呢？」
"Body aches"

1. 需要 [Yes]   8. 唔知道 [Don't know]
2. 唔需要 [No]

A16e 「『頭痛』，係唔係需要用抗生素呢？」
"Headaches"

1. 需要 [Yes]   8. 唔知道 [Don't know]
2. 唔需要 [No]

A17 「你有冇聽過以下術語呢？」
"Have you heard of any of the following terms?"

【訪問員注意：若受訪者表示疑惑，可向受訪者簡單解釋：「你只需要話俾我知你有冇聽過呢啲術語就可以，唔一定要知道佢哋點解」】
【Notes to interviewer: If the respondent expresses doubt, please briefly explain to the respondent: "You only need to tell me whether you have heard of the following terms, and you do not need to understand the exact meaning of these terms."】

【A17a 至 A17c 會隨機顯示。】[Questions A17a to A17c will be displayed randomly.]

A17a 「『耐藥性細菌』，你有冇聽過呢？」
"Have you heard of 'Drug-resistant bacteria'?"

   1. 有 [Yes]   9. 唔記得 [Can't remember]
   2. 冇 [No]

A17b 「『抗生素耐藥性』，你有冇聽過呢？」
"Have you heard of 'Antibiotic resistance'?"

   1. 有 [Yes]   9. 唔記得 [Can't remember]
   2. 冇 [No]

A17c 「『抗菌素耐藥性』，你有冇聽過呢？」
"Have you heard of 'Antimicrobial resistance'?"

   1. 有 [Yes]   9. 唔記得 [Can't remember]
   2. 冇 [No]

【如受訪者冇聽過或唔記得有否聽過抗生素耐藥性／抗菌素耐藥性／耐藥性細菌（A17a／A17b／A17c＝2／9），請讀出以下內容 (A18_In) 。】
【If never heard of or can't remember whether he / she has heard of antibiotic resistance / antimicrobial resistance / drug-resistant bacteria (A17a / A17b / A17c = 2/9), continue with the instruction (A18_In).】

A18_In「以下問題會提及耐藥性或者抗藥性，即係指微生物例如細菌、病毒能夠抵抗藥物。」
"Drug resistance means that microorganisms such as bacteria and viruses can resist drugs."

A18「你覺得以下一啲對抗生素同抗藥性嘅睇法係『啱』定係『錯』呢？」
"Please indicate whether you think the following statements are 'true' or 'false'."

【訪問員注意：若受訪者表示疑惑，可向受訪者簡單解釋：「你只需要以你嘅認知回答就可以。」】
【Notes to interviewer: If the respondent expresses doubt, please briefly explain to the respondent: "You may answer the questions based on what you know."】

【A18a至A18j會隨機顯示】[Questions A18a to A18j will be displayed randomly.]

A18a 「『抗生素即係消炎止痛藥』，你覺得係啱定錯呢？」
"'Antibiotics are anti-inflammatory drugs'"

    1. 啱／對 [True]   8. 唔知道 [Don't know]
    2. 錯／不對 [False]

A18b 「『有啲感染對抗生素治療越嚟越有抗藥性』，你覺得係啱定錯呢？」
"'Some infections are becoming increasingly resistant to treatment by antibiotics'"

    1. 啱／對 [True]   8. 唔知道 [Don't know]
    2. 錯／不對 [False]

A18c 「『如果細菌產生抗藥性，就好難、甚至冇可能用抗生素醫治細菌感染』，你覺得係啱定錯呢？」
"'If bacteria are resistant to antibiotics, it can be very difficult or impossible to treat the infections they cause'"

    1. 啱／對 [True]   8. 唔知道 [Don't know]
    2. 錯／不對 [False]

A18d 「『對抗生素具有抗藥性嘅細菌會喺人同人之間傳播』，你覺得係啱定錯呢？」
"'Bacteria which are resistant to antibiotics can be spread from person to person'"

    1. 啱／對 [True]   8. 唔知道 [Don't know]
    2. 錯／不對 [False]

A18e 「『食剩嘅抗生素，可以留番下次自己或其他人病嘅時候使用』，你覺得係啱定錯呢？」
"'I myself or other can use the antibiotics kept for treating illness next time'"

    1. 啱／對 [True]   8. 唔知道 [Don't know]
    2. 錯／不對 [False]

A18f 「『進食生或未煮熟嘅食物更容易接觸或感染有害嘅微生物，包括耐藥性細菌』，你覺得係啱定錯呢？」

"'Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria'"

1. 啱／對 [True]　　　　　　8. 唔知道 [Don't know]
2. 錯／不對 [False]

A18g 「『高危人士（包括孕婦、嬰幼兒、長者同埋免疫力較低人士）如避免食生或未煮熟嘅即食食物，可以減低佢哋喺食物感染耐藥性細菌嘅風險』，你覺得係啱定錯呢？」

"'If high-risk individuals (including pregnant women, young children, elderly and people with weakened immune systems) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced'"

1. 啱／對 [True]　　　　　　8. 唔知道 [Don't know]
2. 錯／不對 [False]

A18h 「『徹底煮熟食物可有效殺死食物中嘅耐藥性細菌』，你覺得係啱定錯呢？」

"'Thorough cooking is effective to kill drug-resistant bacteria in food'"

1. 啱／對 [True]　　　　　　8. 唔知道 [Don't know]
2. 錯／不對 [False]

A18i 「『用不同工具分開處理熟食或即食食物和生食食物可防止耐藥性細菌交叉污染』，你覺得係啱定錯呢？」

"'Using separate utensils to handle cooked or ready-to-eat foods and raw foods can prevent cross-contamination of drug resistant bacteria'"

1. 啱／對 [True]　　　　　　8. 唔知道 [Don't know]
2. 錯／不對 [False]

A18j 「『正服用藥物如抗生素、胃藥(即抗胃酸藥)人士如避免食生或未煮熟嘅即食食物，可以減低佢哋喺食物感染耐藥性細菌嘅風險』，你覺得係啱定錯呢？」

"'If people taking medicines such as antibiotic and stomach medicines (antacids) avoid consuming raw or undercooked ready-to-eat food, their risk of being infected by drug-resistant bacteria from food will be reduced'"

1. 啱／對 [True]
2. 錯／不對 [False]

8. 唔知道 [Don't know]

「 問卷已經完成，多謝你接受我的訪問，拜拜！
The questionnaire ends. Thank you. Goodbye!

Appendix II: Details of Daily Progress of Enumeration

Date	Number of enumerated cases (Landline)	Number of enumerated cases (Mobile)	Number of enumerated cases (Total)
20241125	23	39	62
20241126	16	32	48
20241127	32	33	65
20241128	23	38	61
20241129	29	22	51
20241202	20	16	36
20241203	26	26	52
20241204	16	43	59
20241205	20	48	68
20241206	23	28	51
20241209	23	51	74
20241210	33	40	73
20241211	34	41	75
20241212	49	56	105
20241213	19	46	65
20241216	33	38	71
20241217	27	37	64
Total	446	634	1080

Appendix III: Details of Final Dispositions of Phone Calls and Response Rates

Final dispositions of phone calls	Number of cases (Landline)	Number of cases (Mobile)
(A) No. of telephone numbers sampled	28 695	46 999
(B) No. of ineligible cases		
a) Valid telephone numbers		
i) Claimed wrong number	59	62
ii) Language problem	36	74
iii) Non-residential line	364	70
iv) No target respondent	19	26
b) Invalid telephone numbers		
i) Fax / data line	236	--
ii) Non-working / out of service numbers	8 699	3 701
(C) No. of eligible cases		
a) Successfully completed interviews (I)	446	634
b) Unsuccessful cases		
i) Mid-way termination cases (R)	28	22
ii) Drop out cases such as selected eligible person not-at- home / not available (DO)	219	94
iii) Refusal cases (R)	161	341
(D) No. of cases with unknown eligibility status		
a) Answering machine	832	5 241
b) Busy line	137	1 149
c) Call blocking, password needed	72	65
d) Immediate disconnection	4 366	6 042
e) No answer	13 021	29 478
Landline (RR_L) / *Mobile* (RR_m) *Survey Response Rates:* $$= \frac{Completed\ (I)}{Completed\ (I) + Refused(R) + Drop\ Out\ Cases\ (DO)}$$	*52.2%*	*58.1%*
Combined Response Rate **(RR)***:* $$= (RR_L * P_L) + (RR_m * (1 - P_L))$$ where P_L = the percentage of the total number of completed interviews coming from the landline survey (= 446/1080= 41.3%) RR_L = landline survey response rate RR_m = mobile survey response rate	*55.7%*	

Appendix IV: Details of Process of Weighting on Survey Data

This survey employed the dual-frame telephone sampling which combines a set of telephone numbers selected randomly from the landline sampling frame with another set of telephone numbers selected randomly from the mobile phone sampling frame, while individuals with both landline and mobile numbers can be sampled from both frames. In order to avoid biased estimates due to a duplication of the population in both frames or from other unknown factors, single-frame estimator method was employed to weight the survey data according to the following steps (Bankier, 1986; Wong, Zheng and Wan, 2022):

Step 1

Since each respondent has own different numbers of residential landline numbers and mobile phone numbers, their chances of being selected for interview are not equal if we use dual-frame telephone sampling. The first step of weighting procedure is to adjust the unequal chance effects of the dual-frame survey by estimating the probabilities of being selected for each respondent based on the number of landlines and the number of mobile phones owned by each respondent with the estimated totals in the target population. The probability of being sampled in the combined landline and mobile phone sampling frame for i^{th} sampled individual is derived as follow:

$$\pi_i = \frac{n_L}{N_L} \times \frac{t_i^L}{e_i^L} + \frac{n_m}{N_m} \times t_i^m$$

where $i = i^{\text{th}}$ sampled individual in this survey

       n_L = the size of landline sample

       N_L = the size of the landline sampling frame

       t_i^L = the number of landline telephones used to receive calls in the household of ith sampled individual

       e_i^L = the number of eligible persons in the household of ith sampled individual

       n_m = the size of the mobile phone sample

       N_m = the size of the mobile phone sampling frame

       t_i^m = the number of mobile phones used to receive calls by i^{th} sampled individual

Design weights are defined as the inverse of probability of ith sampled individual being sampled. Hence, the weighting factor 1 (WT1) is: $WT1_i = \pi_i^{-1}$. The calculations are summarised in the following table:

No. of landline no.	No. of mobile no.	No. of eligible persons in the household	Weighting factor 1
0	1	NA.	13119.041009464
0	2	NA.	6559.520504732
0	3	NA.	4373.013669821
0	4	NA.	3279.760252366
0	5	NA.	2623.808201893
0	6	NA.	2186.506834911
0	7	NA.	1874.148715638
1	0	1	3923.728699552
1	0	2	7847.457399103
1	0	3	11771.186098655
1	0	5	19618.643497758
1	1	1	3020.375126714
1	1	2	4910.267486381
1	1	3	6204.309526284
1	1	4	7145.920270444
1	1	5	7861.820176695
1	1	6	8424.480108680
1	1	7	8878.345303502
1	1	8	9252.188522192
1	1	9	9565.458515932
1	2	1	2455.133743191
1	2	2	3572.960135222
1	2	3	4212.240054340
1	2	4	4626.094261096
1	2	5	4915.886931044
1	3	1	2068.103175428
1	3	2	2808.160036227
1	3	3	3188.486171977
1	3	4	3420.087781785
1	3	6	3687.970351865
1	4	2	2313.047130548
1	4	3	2565.065836339
1	4	4	2712.855823999
1	5	2	1966.354772418
1	5	3	2145.560740547

No. of landline no.	No. of mobile no.	No. of eligible persons in the household	Weighting factor 1
1	6	1	1404.080018113
1	6	4	1919.144863519
2	1	1	1706.646799156
2	1	2	3020.375126714
2	1	3	4062.868895043
2	1	4	4910.267486381
2	1	5	5612.650831414
2	2	1	1510.187563357
2	2	2	2455.133743191
2	2	4	3572.960135222
2	3	3	2508.896145874
3	1	1	1189.337909591
3	1	2	2180.956053555
3	1	4	3740.138222063
3	2	2	1870.069111031
4	1	4	3020.375126714
4	2	3	2031.434447522

Note: According to OFCA's Key Statistics for Telecommunications in HK -- Wireless Service (27.12.2024), the number of public mobile subscribers was roughly 25 636 322 in Hong Kong in September 2024 (including conventional mobile voice and data subscriptions). However, there is still no official statistics available on how many mobile numbers are actually in use by people aged 15 or above. In order to solve this problem, we added a question in this survey to ask the respondents how many mobile numbers they had (as the main user). Then we used the mean of mobile numbers as depicted from the survey result as a reference indicator to calculate the size of mobile phone sampling frame. As the mean of mobile numbers was 1.307326355851567 and the number of people aged 15 or above in the third quarter of 2024 (based on General Household Survey) was 6 362 200, the size of mobile phone sampling frame was estimated to be 8 317 472 (6 362 200 * 1.307326355851567 = 8 317 472).

Step 2

The second weighting procedure is to ensure that the age-gender distribution of survey data is in line with the prevailing distribution of the Hong Kong population. Independent population estimates by gender and age provided by the Census and Statistics Department (based on General Household Survey, 3rd Quarter 2024) are used as control totals and appropriate statistical adjustments are made to account for the inclusion probabilities and the differences in response rates across age group and gender. The second weighting factor of a particular age-gender group is calculated by dividing the population control total of that age-gender group by the estimated number of persons in that age-gender group in the survey weighted by the weighting factor 1 (WT1). The weighting factor 2 of ith sampled individual (WT2$_i$) is derived from:

$$WT2_i = \frac{N_k}{W_1 k}$$

where N_k = Population size of kth age-gender group

$W_1 k$ = Estimated size of kth age-gender group from the survey weighted by weighting factor 1

The calculation for weighting factor 2 (WT2) of specific age-gender groups are summarised in the following table:

Age group	Age-gender distribution of the population provided by C&SD [#]		Estimated age-gender distribution from the survey weighted by WT1*		Weighting Factor 2 (WT2)	
	Male (A)	Female (B)	Male (C)	Female (D)	Male (A ÷ C)	Female (B ÷ D)
15-24	299 300	287 100	408 219	404 890	0.733184788	0.709081352
25-34	419 100	429 600	762 482	644 027	0.549652099	0.667052272
35-44	471 900	534 900	740 004	761 154	0.637699072	0.702748270
45-54	475 500	590 800	624 581	584 038	0.761310774	1.011577692
55-64	545 900	647 200	572 563	767 603	0.953432627	0.843143702
65 or above	783 600	877 300	787 359	1 009 548	0.995226047	0.869002805

[#] Land-based non-institutional population aged 15 and above (excluding foreign domestic helpers) by gender and age in the third quarter of 2024 (General Household Survey)

* The figures on the age-gender distribution from the survey weighted by weighting factor 1 were rounded off to their nearest integers.

Step 3

The final weighting factor of ith sampled respondent in this survey is derived from:

$$WT\_F_i = WT1_i * WT2_i * BASE$$

where WT_F_i = final weighting factor of ith sampled individual

            $WT1_i$ = weighting factor 1 of ith sampled individual

            $WT2_i$ = weighting factor 2 of ith sampled individual

            BASE= sample size adjustment factor= size of total sample/ size of Hong Kong population aged 15 or above

Reference:

Bankier, Michael D. (1986). "Estimators based on several stratified samples with applications to multiple frame surveys." *Journal of the American Statistical Association* 81(396): 1074-1079

Wong, Kevin Tze-wai, Victor Zheng, and Po-san Wan. (2022). "Using a dual-frame design to improve phone surveys on political attitudes: developing a weighting strategy for limited external information in Hong Kong." *Quality & Quantity* 56(4): 2387-2414.

Appendix V: Distribution of Frequency Tables of Gender and Age

【Due to the rounding effect, the total percentage may also not equal to 100% and the total sample size of weighted results may not equal to 1,080.】

GENDER

	Unweighted		Weighted	
	Frequency	Percent	Frequency	Percent
1. Male	514	47.6	508	47.1
2. Female	566	52.4	572	52.9
Total	1080	100.0	1080	100.0

AGE

	Unweighted		Weighted	
	Frequency	Percent	Frequency	Percent
1. 15-24	89	8.2	100	9.2
2. 25-34	152	14.1	144	13.3
3. 35-44	174	16.1	171	15.8
4. 45-54	172	15.9	181	16.8
5. 55-64	183	16.9	203	18.8
6. 65 or above	310	28.7	282	26.1
Total	1080	100.0	1080	100.0