Report on the Telephone Opinion Survey on General Public's Knowledge, Attitude and Practice on Antibiotic Resistance 2023

Submitted to

Infection Control Branch
Centre for Health Protection
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Submitted by

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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). By means of landline and mobile telephone interviews via random sampling, the survey was conducted from 27 November 2023 to 8 January 2024. The sample size of 1,083 successful interviews (426 from landline numbers and 657 from mobile numbers) was achieved with a combined response rate of 50.1%.

3. To make the findings more representative of the Hong Kong general population, the data of this survey was weighted 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 before data analysis.

Key Findings of the 2023 Survey

4. In the survey, over one-third (36.6%) of all respondents last took antibiotics within the past year. The majority (97.1%) of those who had ever taken antibiotics reported that their last taken antibiotics were prescribed by doctors, and 62.2% of this subgroup obtained their antibiotics last taken from private clinics. The major source of antibiotics

last taken that were not or could not remember if prescribed by doctors was from medical store or pharmacy (58.9%).

5. About a fifth (19.7%) of respondents whose antibiotics last taken were prescribed by doctors, reported that they had noticed the health advice on antibiotics medicine bags. Among them, 80.0% considered the advice helpful to remind them maintaining personal hygiene.

6. When handling or taking antibiotics in daily life in the last medication period, the proportions of respondents whose antibiotics last taken being prescribed by doctors always practising the following are listed below:

    a. Eat or drink only thoroughly cooked or boiled items (89.6%);
    b. Young children with symptoms of infections should minimise contact with other children (79.4%);
    c. Wear surgical mask if you have respiratory symptoms (77.3%);
    d. Disinfect and cover all wounds (64.4%), and;
    e. Practise frequent hand hygiene (62.8%).

7. A majority (91.9%) of respondents whose antibiotics last taken were prescribed by doctors completed the whole course of treatment as instructed by doctor. Of those who did not complete the whole course of treatment, the main reason for not completing the treatment was improvement of symptoms (59.3%).

8. Around three-fourths (73.8%) of the respondents reported that they had not noticed the notices about “Do not purchase antibiotics without a prescription” posted at community pharmacies, while 7.0% noticed the notice and considered it was helpful, and 2.1%

noticed the notice but considered it was not helpful.

9. In the past 12 months before enumeration, nearly half (46.7%) of all respondents had consulted doctor(s) for cold or flu. Among them, 96.2% did not request antibiotics during that consultation.

10. When doctor's initial assessment indicated that antibiotic was not needed at the moment, the majority (94.7%) 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. About half (49.5%) of all respondents wanted their doctors to share decision making with them on antibiotics prescription. A majority (81.0%) of the respondents did not prefer consulting doctors who prescribed antibiotics more readily.

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

    a. Headaches (No: 91.0%);
    b. Body aches (No: 89.2%);
    c. Cold and flu (No: 83.8%);
    d. Bladder infection or urinary tract infection (UTI) (Yes: 56.9%); and
    e. Skin or wound infection (Yes: 50.0%).

    Respondents aged 65 or above had the lowest percentages of giving correct answers to 4 out 5 of the above health conditions.

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) (66.7%);

b. “Drug-resistant bacteria” (耐藥性細菌) (66.6%); and

c. “Antimicrobial resistance” (抗菌素耐藥性) (22.6%).

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: 91.4%);

b. Using separate utensils to handle cooked or ready-to-eat foods and raw foods can prevent cross-contamination of drug resistant bacteria (True: 87.6%);

c. Some infections are becoming increasingly resistant to treatment by antibiotics (True: 79.6%);

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: 73.7%);

e. Thorough cooking is effective to kill drug-resistant bacteria in food. (True: 71.4%);

f. 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: 71.2%);

g. Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria (True: 71.1%);

h. If bacteria are resistant to antibiotics, it can be very difficult or impossible to treat the infections they cause (True: 67.6%);

i. Antibiotics are anti-inflammatory drugs (False: 65.1%); and

j. Bacteria which are resistant to antibiotics can be spread from person to person (True: 39.2%).

Respondents aged 65 or above had the lowest percentages of giving correct answers to 8 out of 10 of the above statements.

Further Analysis

14. Findings of this survey were compared to those of the 2022 survey. Questions with statistically significant differences in percentage distribution at 5% level were shown below:

- The proportion of all respondents who had taken antibiotics in the past 12 months before the enumeration increased from 26.1% to 36.6%.
- Nearly half (46.7%) 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 remained high but decreased from 96.4% to 94.7%.
- The proportion of respondents who wanted doctors to share decision making with them on antibiotics prescription decreased from 66.3% to 49.5%.
- Compared to the 2022 survey, the percentage of always wearing surgical mask when they have respiratory symptoms increased from 72.3% to 77.3%.
- The question on whether selected health conditions could be treated with antibiotics in the 2022 survey was slightly changed 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 83.8%, 89.2% and 91.0% in 2023, 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 56.9% and 50.0% in 2023.

- The proportion of having heard of "Antibiotic resistance" and "Antimicrobial resistance" decreased to 66.7% and 22.6% in 2023 from 76.0% and 40.3% in 2022.
- As to the statement "Bacteria which are resistant to antibiotics can be spread from person to person", the proportion of giving correct answers decreased to 39.2% in 2023 from 44.1% in 2022.

Recommendations

15. Less than two-thirds of the respondents correctly answered that bladder infection or urinary tract infection (UTI), and skin or wound infection need to use antibiotics. More focused health education on which kinds of common health conditions need to use antibiotics should be provided to the public.

16. Only less than two-fifths of the respondents knew that bacteria resistant to antibiotics could be spread from person to person. More public education on knowledge and related infection control practices should be provided.

17. Around three-fourths of the respondents reported that they had not noticed the notices about "Do not purchase antibiotics without a prescription" posted at community pharmacies. In addition, only about a fifth of the respondents noticed the health advice on antibiotics medicine bags. More health promotion, better design, in addition to explanation on the health advice by pharmacists / doctors while dispensing antibiotics to patients could be considered.

18. The survey revealed that the oldest age group of 65 or above generally had the lowest

level of knowledge about AMR and the use of antibiotics among all age group. Tailor made health education and promotion that could be easily accessed and understood by the elders should be enhanced.

19. There were drops in the percentage of respondents having heard of the terms Antibiotic Resistance (抗生素耐藥性) (from 76.0% to 66.7%), and Antimicrobial Resistance (抗菌素耐藥性) (from 40.3% to 22.6%). In light of the knowledge deficit among the public, more intensive health education and promotion activities should be conducted to raise the public's knowledge and awareness of antimicrobial resistance through easy-to-understand and impactful media channels.

20. This survey also revealed that a lower proportion of respondents wanted to share decision making with doctors on antibiotics prescription (66.3% in 2022 and 49.5% in 2023) 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 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 have issued the Global Action Plan on Antimicrobial Resistance ("AMR") and Action Agenda for AMR in the Western Pacific Region in 2015 respectively. In recognition of the major threat posed by AMR to public health, the Hong Kong 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. 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 and 2023. 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.

[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 were 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 in 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 20 to 25 October 2023 and a total of 30 interviews (15 of them were from landline samples and the other 15 were from mobile phone samples) were successfully collected. The number of successful interviews conducted in the pilot study were not counted 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 27 November 2023 to 8 January 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. In order 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 of a particular telephone number, 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 1,083 eligible Hong Kong residents aged 15 or above were successfully interviewed. Among these, 426 were from the landline sample and the other 657 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 48.7% and 51.0% respectively. The combined response rate was 50.1%. 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 to be interviewed via mobile phone, young people seldom staying at home so that it is difficult to find them through residential landlines and so on), 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 27.

The statistical presentation of single variable included descriptive statistics such as frequency and percentage. But when analysing more than one variable (such as sub-groups analysis of demographic variables), different statistical significance tests were applied to handle 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

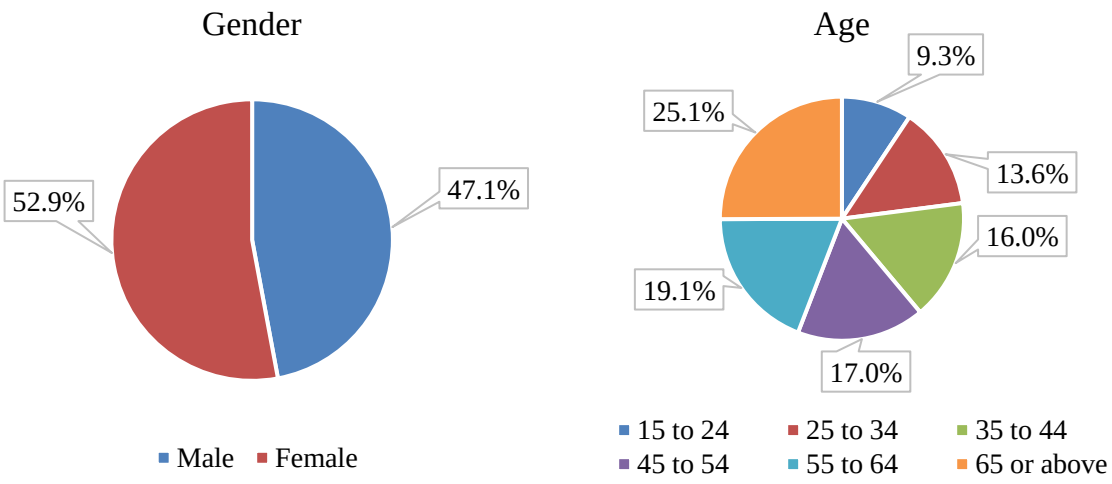
probability) between 0 and 1. The smaller the *p*-value, the stronger the confidence that we should reject the null hypothesis (no relationship between two variables or the observed differences between two variables were just random). There were three levels of significance frequently used in survey 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 age group, 9.3% of the respondents were 15 to 24 years of age, 13.6% were 25 to 34, 16.0% were 35 to 44, 17.0% were 45 to 54, 19.1% were 55 to 64, and the remaining 25.1% were 65 years old or above.

Figure 3.1: Demographic background of the 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. 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.

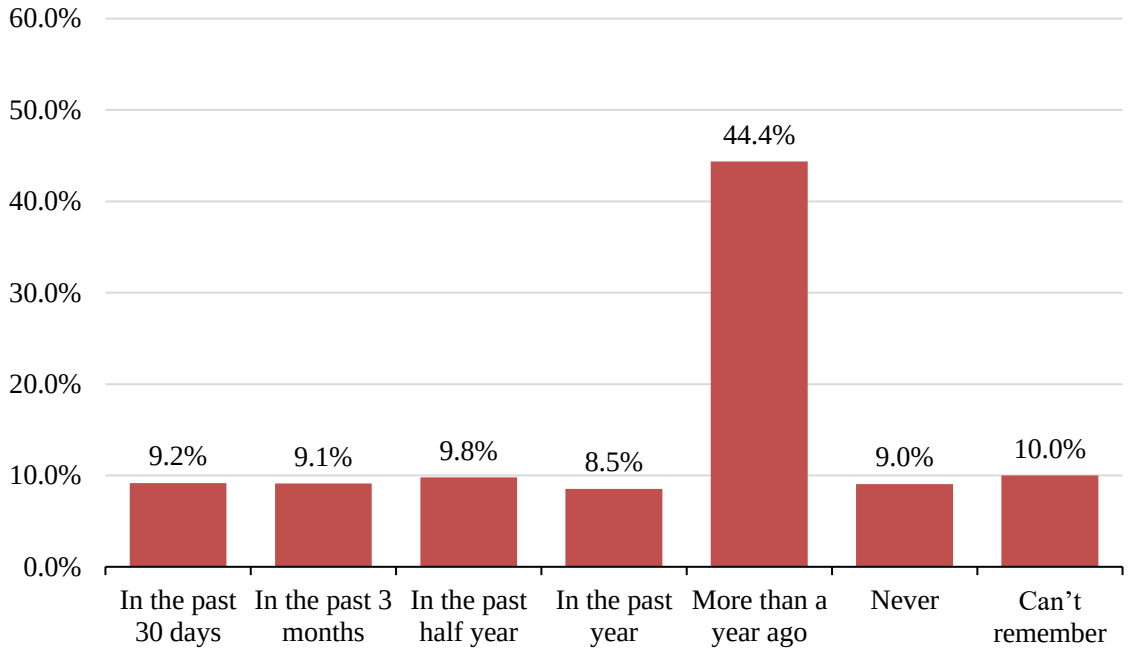
4.1 Use of antibiotics

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 (36.6%) of all respondents reported that they last took antibiotics within the past year, while 44.4% 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 = 1083.
Question: A1 "When did you last take antibiotics?"

Analysed by gender and age, male respondents and those aged between 45 and 54 had a higher proportion of last taking antibiotics more than a year ago (Table 4.1.1).

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

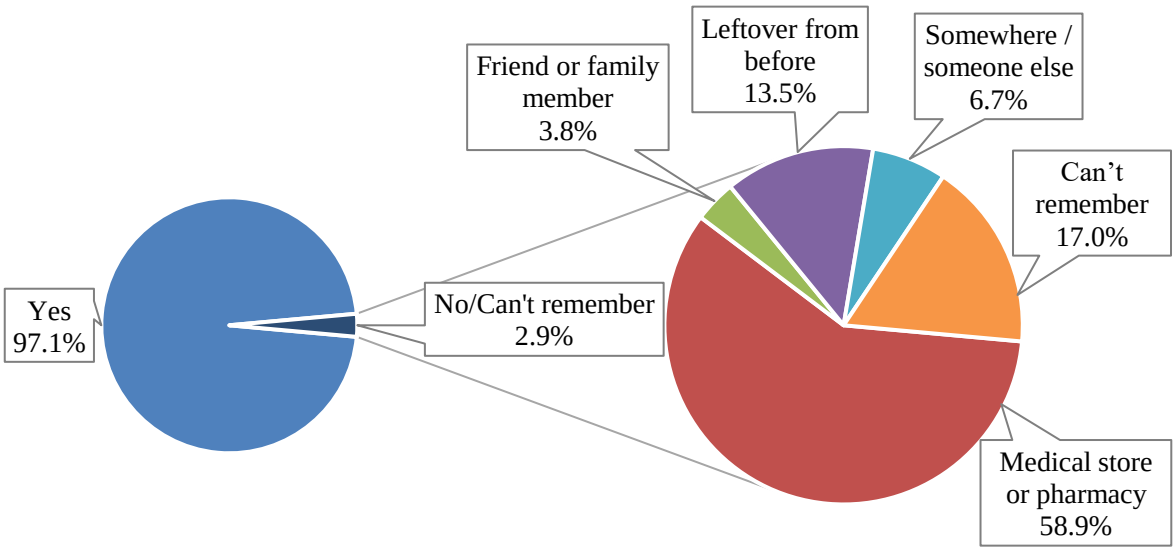
	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
In the past 30 days	9.9	8.5	8.4	12.2	9.0	6.0	10.3	9.2
In the past 3 months	7.7	10.4	11.5	5.8	13.4	12.2	5.9	7.8
In the past half year	10.8	8.9	12.4	7.4	15.8	14.1	6.0	6.2
In the past year	5.9	10.9	16.8	10.7	7.2	4.1	12.5	5.1
More than a year ago	45.5	43.3	33.3	47.3	44.0	48.5	44.0	44.6
Never	10.5	7.8	12.0	13.5	5.4	5.4	10.1	9.5
Can't remember	9.8	10.2	5.7	3.1	5.2	9.8	11.3	17.6
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.029*		0.000***					

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

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. A vast majority (97.1%) of them said yes and the remaining 2.9% said no (2.3%) or could not remember (0.6%) (Figure 4.1.2).

Figure 4.1.2: Whether the last taken antibiotics were prescribed by doctors and otherwise the source (%)



Base(N): Persons aged 15 and over who had taken antibiotics =877.

Question: A2 "On that occasion, were the antibiotics prescribed by doctors?"

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 =25.

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

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	97.2	97.0	98.1	95.7	97.7	95.4	98.6	97.3
No	2.6	2.0	0.8	4.3	1.4	4.6	1.1	1.5
Can't remember	0.2	0.9	1.2	0.0	0.9	0.0	0.2	1.3
Sample size	(406)	(470)	(83)	(123)	(155)	(156)	(163)	(198)
p-value (Chi-Square)	0.312		0.215					

*p<0.05, **p<0.01, ***p<0.001
Question: A2 "On that occasion, were the antibiotics prescribed by doctors?"

Respondents whose last taken antibiotics were not or could not remember if prescribed by doctors were further asked where they obtained their last taken antibiotics. Most of them (58.9%) reported that they obtained from medical store or pharmacy. Analysed by age, respondents aged between 25 and 34, 45 and 54, and 55 and 64 had a higher rate of getting their antibiotics from medical store or pharmacy than respondents of other age group. There was no statistically significant difference between gender (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 (%)

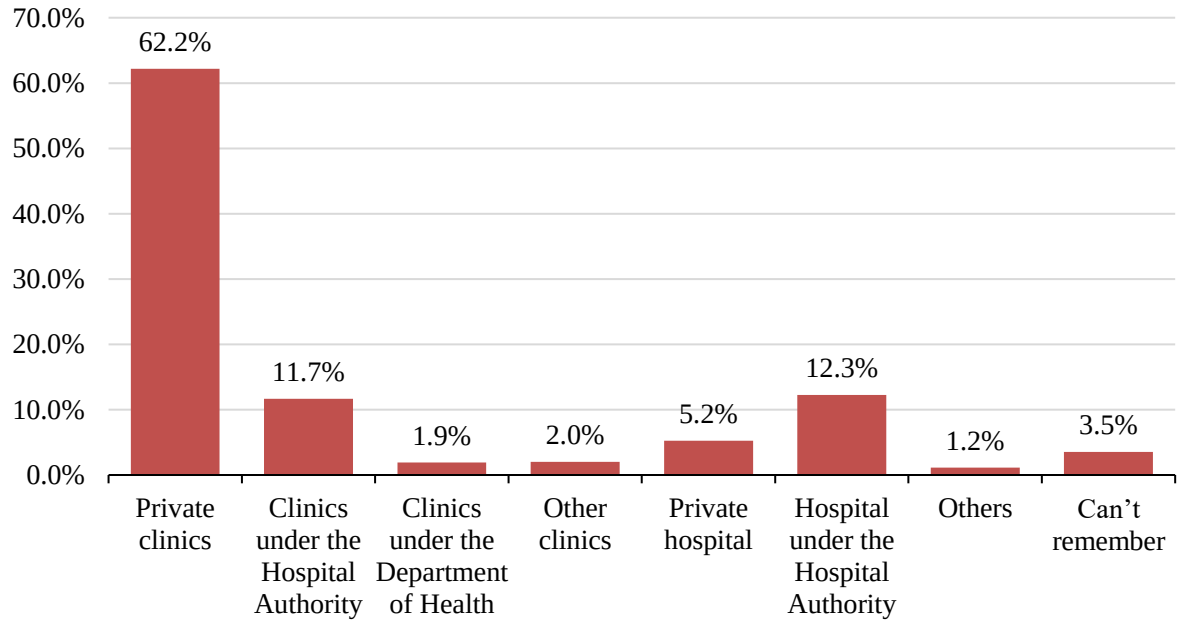
	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Medical store or pharmacy	74.2	46.4	39.5	75.1	14.7	76.3	83.0	44.2
The internet	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Friend or family member	0.0	6.9	60.5	0.0	0.0	0.0	0.0	0.0
Leftover from before	18.6	9.4	0.0	24.9	45.1	0.0	0.0	9.4
Somewhere / someone else	0.0	12.2	0.0	0.0	0.0	23.7	0.0	0.0
Can't remember	7.2	25.0	0.0	0.0	40.1	0.0	17.0	46.4
Sample size	(11)	(14)	(2)	(5)	(4)	(7)	(2)	(5)
p-value (Chi-Square)	0.339		0.045*					

*p<0.05, **p<0.01, ***p<0.001
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. About two-thirds (62.2%) of them replied that they obtained 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 = 852.
Question: A4 "On that occasion, from which type of clinic or hospital did you get the antibiotics?"

No statistically significant difference between the respondents' gender and age was found in the type of clinic or hospital respondents got the last taken antibiotics (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	63.4	61.1	59.2	61.8	69.2	68.1	62.8	53.0
Clinics under the Hospital Authority	12.2	11.2	9.6	9.8	6.0	9.8	14.3	17.5
Clinics under the Department of Health	1.6	2.3	0.0	3.3	1.1	1.7	1.2	3.5
Other clinics	1.9	2.1	4.9	2.3	2.9	1.0	1.7	1.0
Private hospital	4.9	5.5	6.3	6.5	7.5	6.0	2.6	3.8
Hospital under the Hospital Authority	10.2	14.0	14.5	12.6	9.9	9.2	14.5	13.5
Others	1.7	0.6	0.0	2.8	1.1	0.8	0.3	1.7
Can't remember	4.0	3.1	5.5	0.8	2.4	3.5	2.7	6.0
Sample size	(395)	(457)	(82)	(118)	(151)	(149)	(160)	(192)
p-value (Chi-Square)	0.508		0.052					

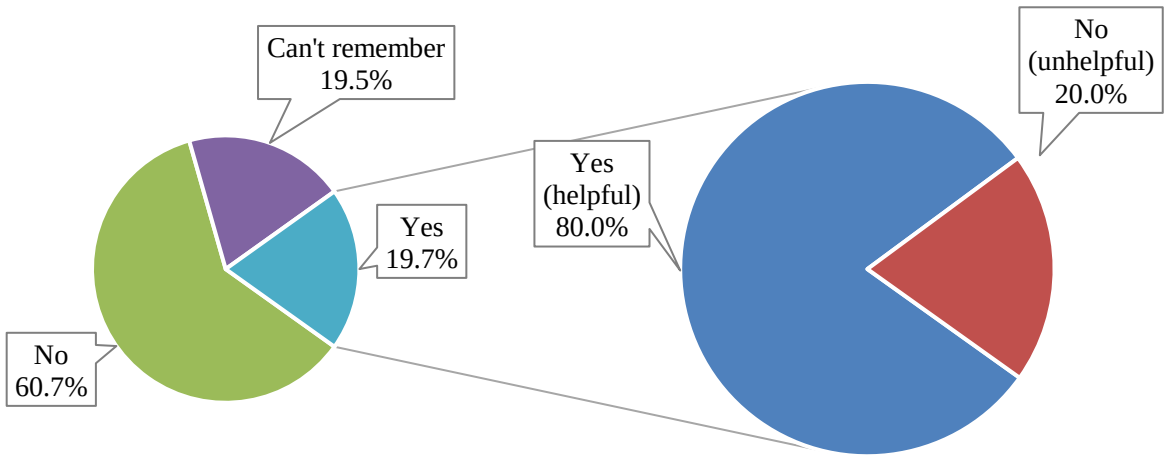
*p<0.05, **p<0.01, ***p<0.001
Question: A4 "On that occasion, from which type of clinic or hospital did you get the antibiotics?"

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. Only about a fifth of them (19.7%) reported that they had noticed the instructions. If respondents had noticed the instructions, they would be further asked whether these instructions were helpful to remind them to be aware of and maintain personal hygiene. Four-fifths (80.0%) 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 antibiotics last taken was prescribed by a doctor = 852 .

Question: A5 "On that occasion, did you notice there are instructions on personal

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 = 168.

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

Analysed by age, respondents aged between 15 and 24 had a higher rate of noticing the instructions and those aged 65 or above had a higher rate of reporting that the instructions were helpful. There was no statistically significant difference between gender in whether respondents noticed the instructions on antibiotics medicine bags and found them helpful (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	19.6	19.9	37.0	19.1	16.6	15.2	18.2	20.0
No	61.4	60.2	53.4	57.7	61.1	64.2	63.7	60.2
Can't remember	19.1	20.0	9.5	23.2	22.3	20.6	18.1	19.8
Sample size	(395)	(457)	(82)	(118)	(151)	(149)	(160)	(192)
p-value (Chi-Square)	0.927		0.015*					
Whether respondents found the instructions helpful								
Yes	77.2	82.4	78.8	61.9	67.9	83.3	86.3	92.7
No	22.8	17.6	21.2	38.1	32.1	16.7	13.7	7.3
Sample size	(77)	(91)	(30)	(22)	(25)	(23)	(29)	(39)
p-value (Chi-Square)	0.408		0.039*					

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

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?"

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. When handling or taking antibiotics in daily life during the last medication period, the proportions of always practising the health advice are listed below:

a. Eat or drink only thoroughly cooked or boiled items (89.6%);

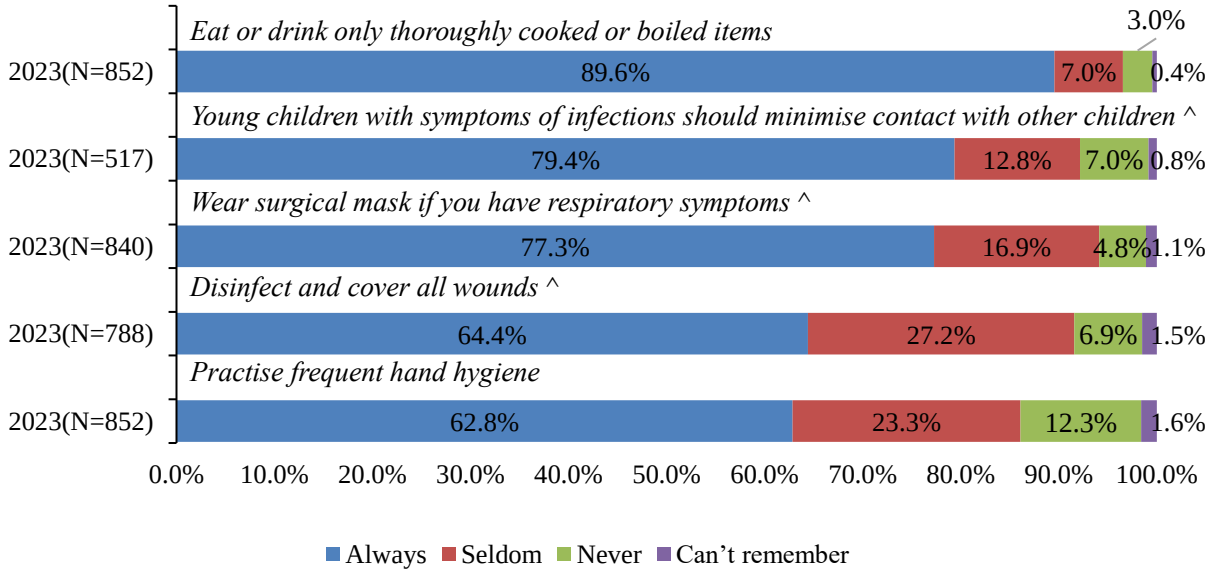
b. Young children with symptoms of infections should minimise contact with other children (79.4%);

c. Wear surgical mask if you have respiratory symptoms (77.3%);

d. Disinfect and cover all wounds (64.4%), and;

e. Practise frequent hand hygiene (62.8%) (Figure 4.2.2).

Figure 4.2.2: Frequency of practising the health advice during the last medication period (%)



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 young children at home/no respiratory symptoms/no wounds were excluded.

Compared with their counterpart, male respondents had lower percentages of always practising all of the five health advice during the last medication period. Those aged between 15 and 24 had the lowest percentage of always practising frequent hand hygiene, while those aged between 25 and 34 had the lowest percentage of always eating or drinking only thoroughly cooked or boiled items, disinfecting and covering all wounds, and letting young children with symptoms of infections minimise contact with other children during the last medication period (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	52.4	71.9	47.2	49.6	63.6	66.0	65.1	72.6
Seldom	29.7	17.7	41.6	34.2	21.4	23.3	20.1	12.9
Never	15.5	9.5	11.1	15.1	12.0	10.4	12.5	12.7
Can't remember	2.4	0.8	0.0	1.1	3.0	0.3	2.3	1.8
Sample size	(395)	(457)	(82)	(118)	(151)	(149)	(160)	(192)
p-value (Chi-Square)	0.000***		0.000***					
Eat or drink only thoroughly cooked or boiled items								
Always	87.0	91.8	85.1	83.6	85.8	91.8	92.1	94.2
Seldom	9.8	4.5	12.3	12.9	9.5	3.5	5.2	3.2
Never	2.6	3.4	2.5	3.5	4.3	4.0	1.4	2.5
Can't remember	0.7	0.2	0.0	0.0	0.4	0.6	1.3	0.0
Sample size	(395)	(457)	(82)	(118)	(151)	(149)	(160)	(192)
p-value (Chi-Square)	0.015*		0.029*					
Disinfect and cover all wounds								
Always	53.5	73.8	55.9	50.7	65.4	70.6	67.6	68.7
Seldom	33.4	21.8	37.2	42.0	25.3	19.7	25.8	21.7
Never	11.3	3.1	6.9	6.1	6.7	9.6	3.5	8.3
Can't remember	1.7	1.3	0.0	1.2	2.6	0.0	3.2	1.3
Sample size	(364)	(424)	(80)	(112)	(143)	(141)	(145)	(169)
p-value (Chi-Square)	0.000***		0.003**					

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

(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	69.2	84.1	79.0	69.1	76.0	81.5	77.1	79.4
Seldom	22.3	12.2	16.7	23.6	18.8	11.5	17.1	15.1
Never	7.0	2.9	4.3	6.2	4.2	6.3	3.9	4.2
Can't remember	1.4	0.8	0.0	1.1	1.0	0.6	1.9	1.4
Sample size	(387)	(453)	(81)	(115)	(150)	(146)	(158)	(189)
p-value (Chi-Square)	0.000***		0.702					
Young children with symptoms of infections should minimise contact with other children								
Always	74.1	83.6	77.9	66.7	83.1	80.6	87.4	75.7
Seldom	18.8	8.0	22.1	24.9	5.9	10.9	6.6	14.9
Never	6.0	7.8	0.0	6.6	10.4	8.5	4.1	8.7
Can't remember	1.1	0.7	0.0	1.9	0.6	0.0	2.0	0.7
Sample size	(229)	(288)	(55)	(71)	(111)	(107)	(93)	(80)
p-value (Chi-Square)	0.003**		0.005**					

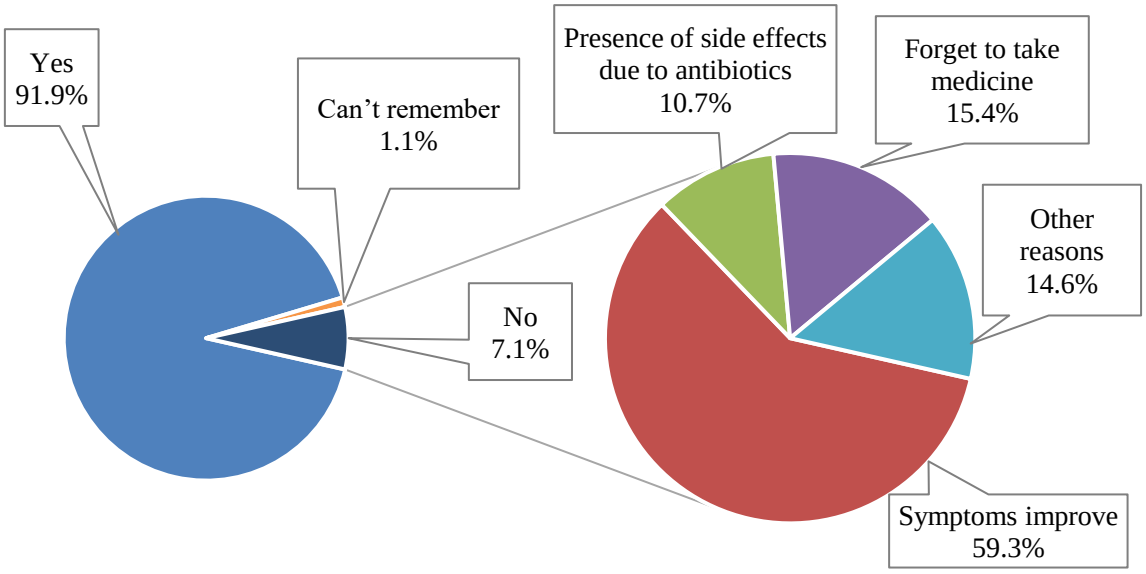
*p<0.05, **p<0.01, ***p<0.001
Question: A7a-e "On that occasion, how often did you practise the following when you handled or took antibiotics in your daily life during the medication period?"

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 doctor. The majority (91.9%) of them reported that they completed the whole course of treatment. More than half (59.3%) of the respondents who did not complete the whole course of treatment as instructed by doctor 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 (%)



Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors =852.

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 =60.

Question: A9"The main reason that you did not complete the whole course of treatment is:"

No statistically significant difference in the proportion of completing the whole course of treatment as instructed by doctor was observed between gender and age group. The difference between gender and age group 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	92.0	91.7	87.3	86.7	91.4	93.5	93.8	94.4
No	6.1	7.9	10.4	11.6	7.4	6.1	5.5	4.6
Can't remember	1.9	0.4	2.3	1.7	1.2	0.3	0.7	1.0
Sample size	(395)	(457)	(82)	(118)	(151)	(149)	(160)	(192)
p-value (Chi-Square)	0.074		0.403					
The main reason why they did not complete the whole course of treatment								
Symptoms improve	58.7	59.7	65.3	63.8	69.0	45.3	45.8	62.0
Presence of side effects due to antibiotics	6.6	13.5	0.0	0.0	14.2	47.1	0.0	6.6
Forget to take medicine	17.5	14.0	30.0	24.3	0.0	7.6	21.1	9.7
Lost the medicine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other reasons	17.2	12.8	4.7	12.0	16.8	0.0	33.1	21.6
Sample size	(24)	(36)	(8)	(14)	(11)	(9)	(9)	(9)
p-value (Chi-Square)	0.816		0.060					

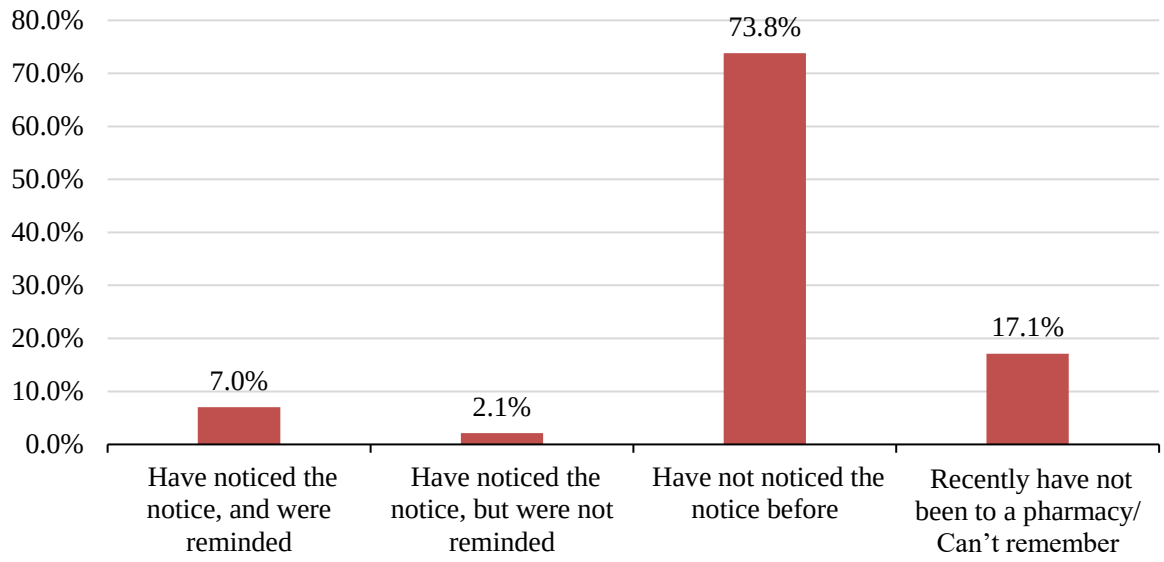
*p<0.05, **p<0.01, ***p<0.001

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:"

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

All respondents were asked whether they noticed the notices "Do not purchase antibiotics without a prescription" posted at community pharmacies and whether they found them useful. The majority (73.8%) of all respondents said that they had not noticed the notice "Do not purchase antibiotics without a prescription" before, while 7.0% noticed the notice and considered it helpful, and 2.1% noticed the notice but considered it not helpful in reminding them not to purchase antibiotics without doctor's prescription (Figure 4.4.1).

Figure 4.4.1: Whether respondents noticed the notices posted at community pharmacies and found them useful (%)



Base(N): Persons aged 15 and over = 1083.
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 age, a higher proportion of respondents aged 15-24 said that they had noticed the notice and were reminded, while those aged 35-44 had a higher proportion of not noticing the notice. No statistically significant difference was found between gender (Table 4.4.1).

Table 4.4.1: 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	7.4	6.6	16.3	5.9	8.0	5.6	5.8	5.3
Have noticed the notice, but were not reminded	2.3	2.0	1.9	0.9	1.3	2.9	2.9	2.2
Have not noticed the notice before	71.6	75.8	68.0	74.1	79.1	73.7	77.0	70.0
Recently have not been to a pharmacy/ Can't remember	18.8	15.6	13.8	19.0	11.6	17.7	14.3	22.5
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.466		0.014*					

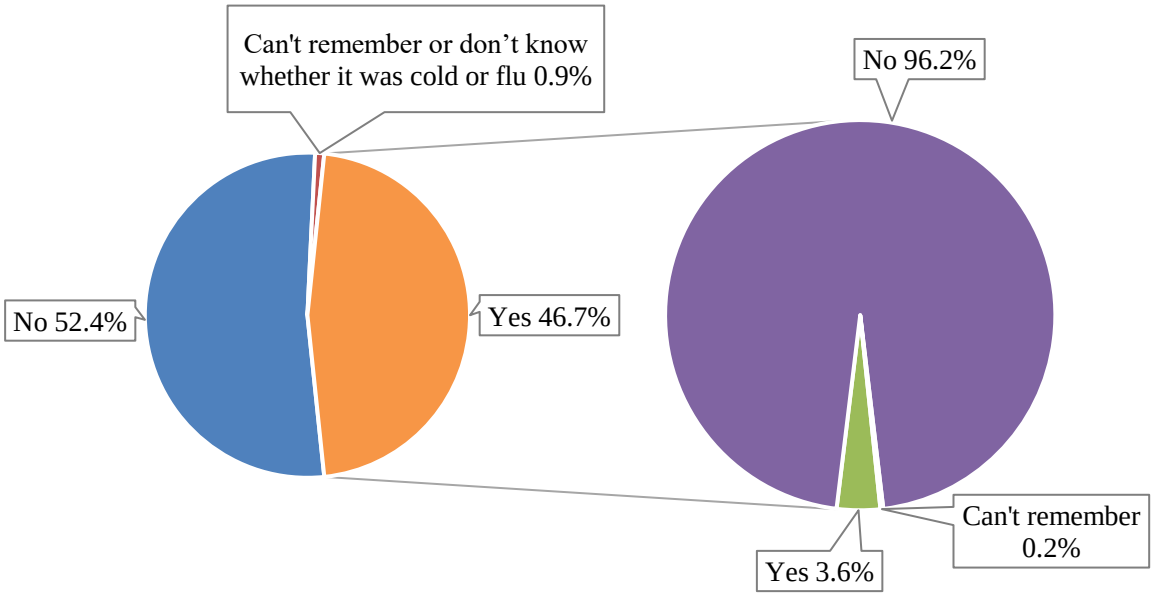
*p<0.05, **p<0.01, ***p<0.001

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?"

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 46.7% 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. A vast majority (96.2%) of the respondents replied that they did not do so. (Figure 4.5.1).

Figure 4.5.1: Whether respondents had consulted doctor(s) for cold or flu and requested antibiotics in the past 12 months (%)



Base(N): Persons aged 15 and over =1083.

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 =506.

Question: A12"Had you asked for antibiotics during that consultation?"

Compared with males and other age group, females and those aged between 35 and 44 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 gender and age group (Table 4.5.1).

Table 4.5.1: 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	42.8	50.1	48.4	53.2	58.5	47.9	45.3	35.2
No	55.9	49.3	51.6	45.5	41.0	51.1	54.3	63.3
Can't remember or don't know whether it was cold or flu	1.3	0.6	0.0	1.4	0.5	1.0	0.5	1.5
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.036*		0.001**					
Had you asked for antibiotics during that consultation?								
Yes	2.9	4.1	10.9	0.0	5.3	3.6	4.2	0.3
No	97.0	95.6	89.1	99.5	94.7	96.4	95.8	98.9
Can't remember	0.1	0.3	0.0	0.5	0.0	0.0	0.0	0.8
Sample size	(218)	(287)	(49)	(78)	(101)	(88)	(94)	(96)
p-value (Chi-Square)	0.714		0.081					

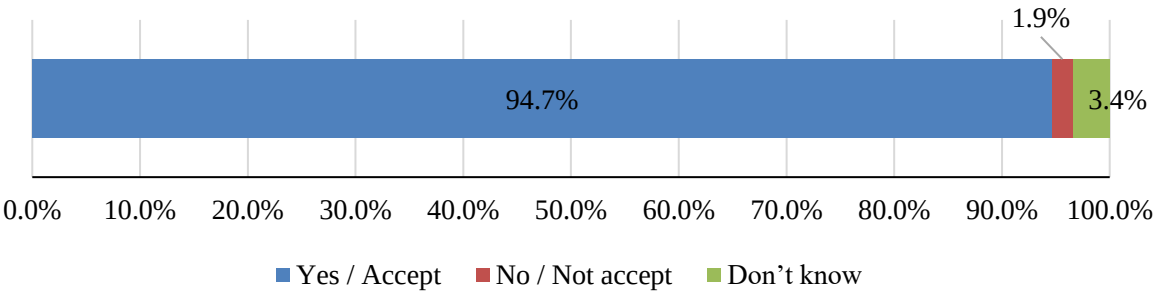
*p<0.05, **p<0.01, ***p<0.001
Question: A11 "In the past 12 months, had you consulted doctor(s) for cold or flu?"; A12 "Had you asked for antibiotics during that consultation?"

4.6 General views, knowledge and awareness

4.6.1 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

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 few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics or not. A vast majority (94.7%) 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 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 = 1083.
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?"

There was no statistically significant difference in acceptance of the doctor's advice between gender and age group (Table 4.6.1).

Table 4.6.1: 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 gender and age (%)

	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Yes / Accept	94.7	94.6	95.8	94.9	96.8	93.9	94.5	93.3
No / Not accept	1.1	2.6	1.9	0.4	3.2	1.5	2.1	2.1
Don't know	4.2	2.8	2.3	4.7	0.0	4.6	3.4	4.6
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.111		0.247					

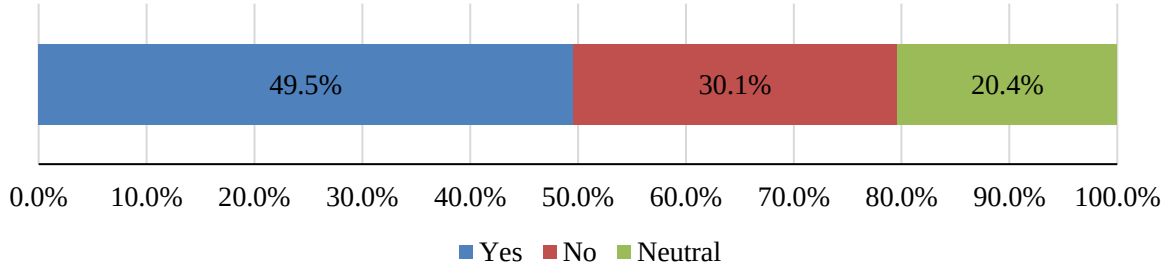
*p<0.05, **p<0.01, ***p<0.001

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?"

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

All respondents were asked if they wanted doctors to share decision making with them on antibiotics prescription. About half (49.5%) of them answered yes (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 = 1083.
Question: A14 “Do you want your doctor to share decision making with you on antibiotics prescription?”

Compared with other age group, 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 gender (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 (%)

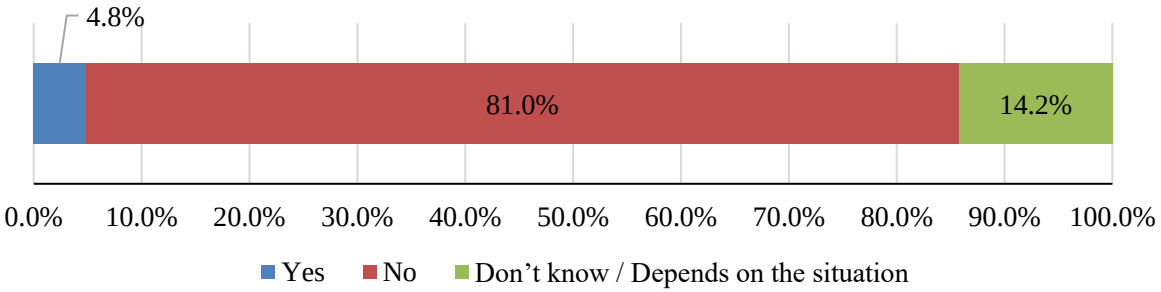
	GENDER		AGE					
	Male	Female	15-24	25-34	35-44	45-54	55-64	≥ 65
Yes	47.3	51.5	49.9	57.2	57.6	53.9	50.3	36.5
No	30.4	29.8	42.9	24.7	31.0	26.2	34.0	27.3
Neutral	22.4	18.6	7.3	18.1	11.4	19.9	15.7	36.2
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.242		0.000***					

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

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

All respondents were asked if they preferred consulting doctors who would prescribe antibiotics more readily. The majority (81.0%) answered that they did not, whereas only 4.8% expressed that they had such a preference (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 = 1083.
Question: A15 "Do you prefer consulting doctors who prescribe antibiotics more readily?"

The comparison of different age group revealed that respondents aged 24 or below and between 55 and 64 had higher rates of not 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	4.2	5.4	6.0	3.6	7.3	6.9	4.0	2.7
No	79.9	82.0	86.8	78.1	79.6	81.2	86.9	76.6
Don't know / Depends on the situation	15.9	12.6	7.2	18.3	13.0	11.9	9.2	20.7
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.219		0.002**					

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

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: 91.0%);

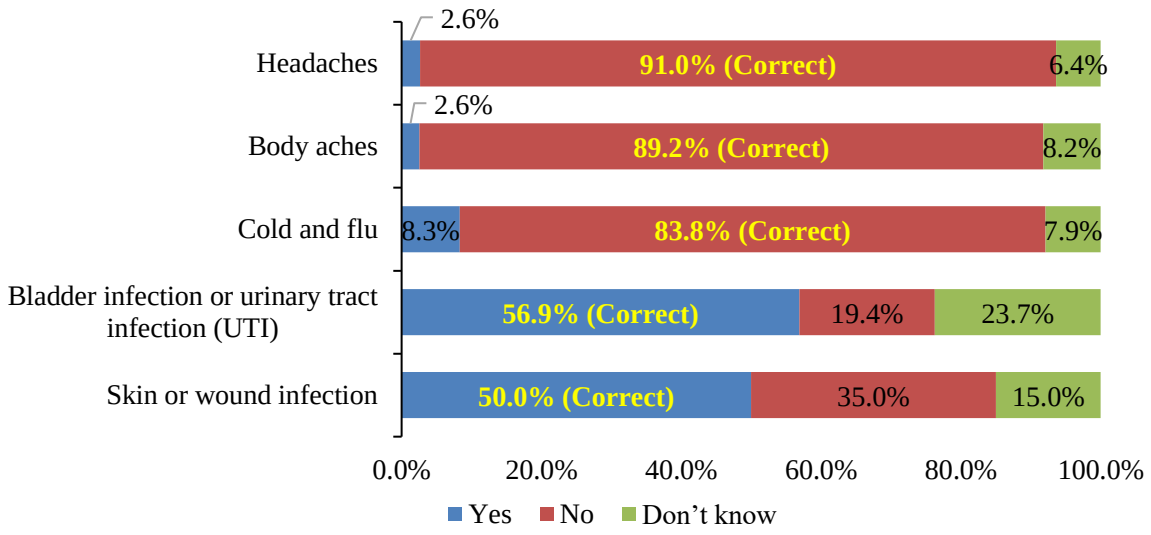
b. Body aches (No: 89.2%);

c. Cold and flu (No: 83.8%);

d. Bladder infection or urinary tract infection (UTI) (Yes: 56.9%); and

e. Skin or wound infection (Yes: 50.0%) (Figure 4.6.4a).

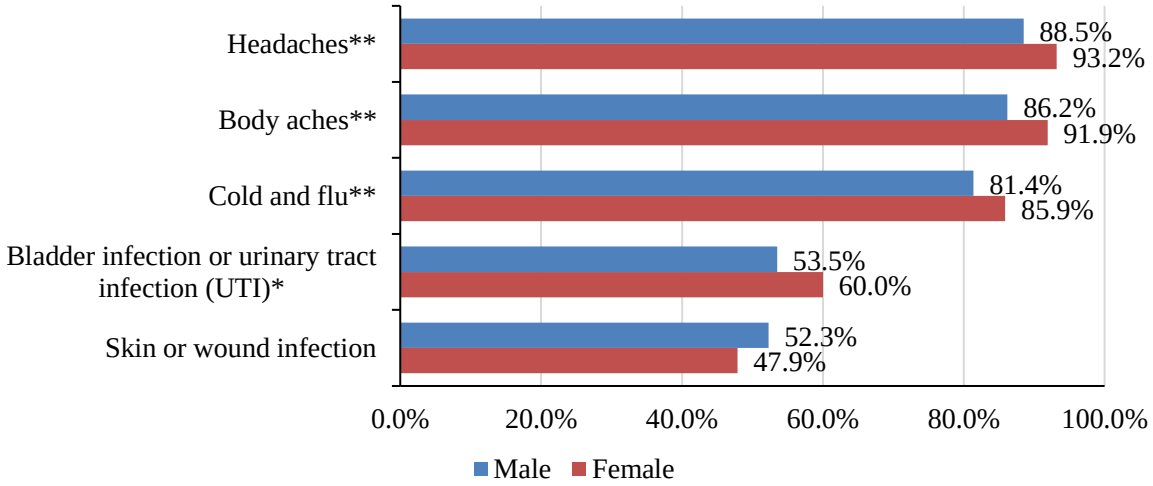
Figure 4.6.4a: Whether respondents thought the selected health conditions need to use antibiotics (%)



Base(N): Persons aged 15 and over =1083.
Question: A16a-e "Do you think these conditions need to use antibiotics?"

Analysed by gender, female respondents were more likely to give correct answers to certain health conditions including bladder infection or urinary tract infection (UTI), cold and flu, body aches, and headaches (Figure 4.6.4b; Table 4.6.4).

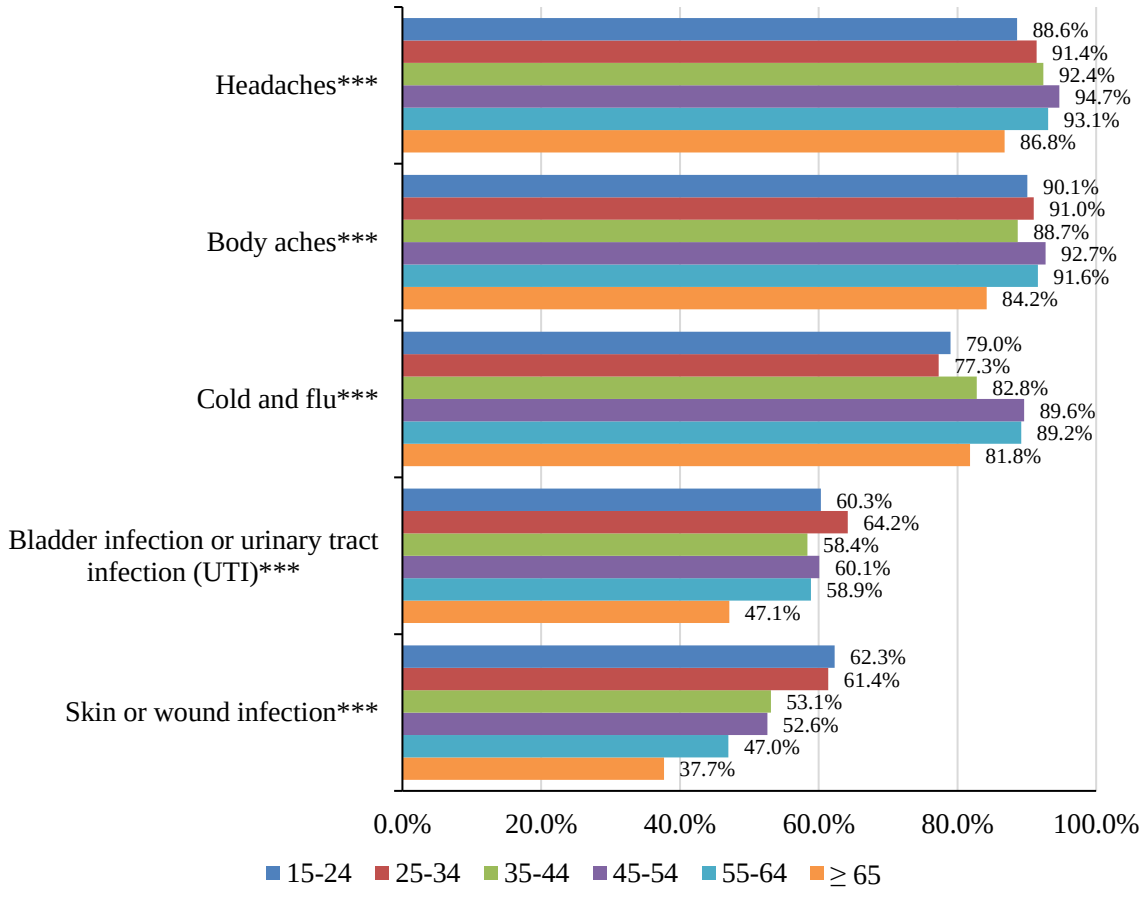
Figure 4.6.4b: Respondents who correctly indicated whether the selected health conditions need to use antibiotics by gender (%)



*p<0.05, **p<0.01, ***p<0.001
Base(N): Persons aged 15 and over =1083.
Question: A16a-e "Do you think these conditions need to use antibiotics?"

Analysed by age, respondents aged 65 or above had the lowest percentages of giving the correct answer to 4 out of 5 selected health conditions including bladder infection or urinary tract infection (UTI), skin or wound infection, body aches, and headaches. The age group of 25 to 34 had the lowest percentage of giving the correct answer to cold and flu (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 (%)



*p<0.05, **p<0.01, ***p<0.001
Base(N): Persons aged 15 and over =1083.
Question: A16a-e "Do you think these conditions need to use antibiotics?"

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)	53.5	60.0	60.3	64.2	58.4	60.1	58.9	47.1
No	19.5	19.3	32.3	20.9	25.9	19.1	14.6	13.4
Don't know	27.0	20.8	7.4	14.8	15.8	20.8	26.5	39.5
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.039*		0.000***					
Cold and flu								
Yes	7.7	8.8	17.0	16.9	8.8	4.4	3.3	6.5
No (Correct)	81.4	85.9	79.0	77.3	82.8	89.6	89.2	81.8
Don't know	10.8	5.2	3.9	5.8	8.4	6.1	7.5	11.7
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.003**		0.000***					
Skin or wound infection								
Yes (Correct)	52.3	47.9	62.3	61.4	53.1	52.6	47.0	37.7
No	32.0	37.8	34.5	27.4	33.6	32.8	38.1	39.5
Don't know	15.7	14.3	3.2	11.1	13.3	14.6	15.0	22.7
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.137		0.000***					
Body aches								
Yes	3.5	1.8	9.2	3.7	3.2	1.6	0.4	1.4
No (Correct)	86.2	91.9	90.1	91.0	88.7	92.7	91.6	84.2
Don't know	10.3	6.3	0.8	5.2	8.1	5.7	8.0	14.5
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.009**		0.000***					

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

(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	2.6	2.6	10.4	5.3	1.4	2.2	0.0	1.3
No (Correct)	88.5	93.2	88.6	91.4	92.4	94.7	93.1	86.8
Don't know	8.9	4.1	1.0	3.3	6.2	3.0	6.9	12.0
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.006**		0.000***					

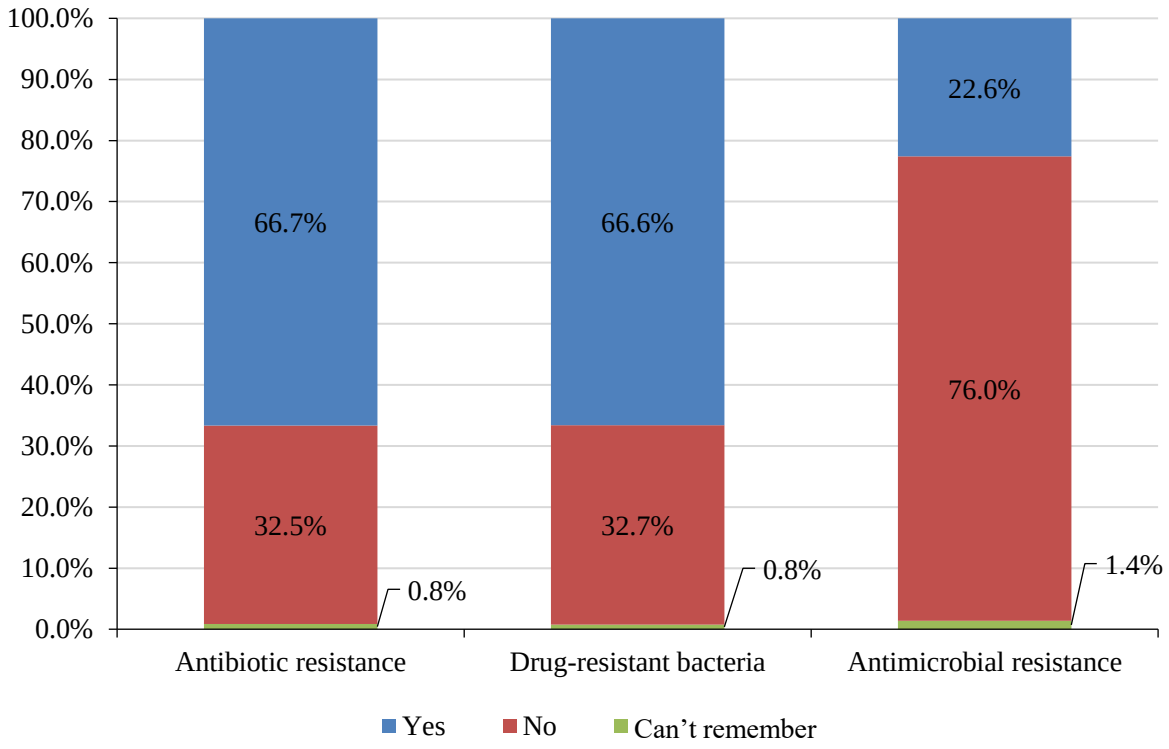
*p<0.05, **p<0.01, ***p<0.001

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

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" (66.7%) and "Drug-resistant bacteria" (66.6%). Only 22.6% of respondents had heard of "Antimicrobial resistance" (Figure 4.6.5a).

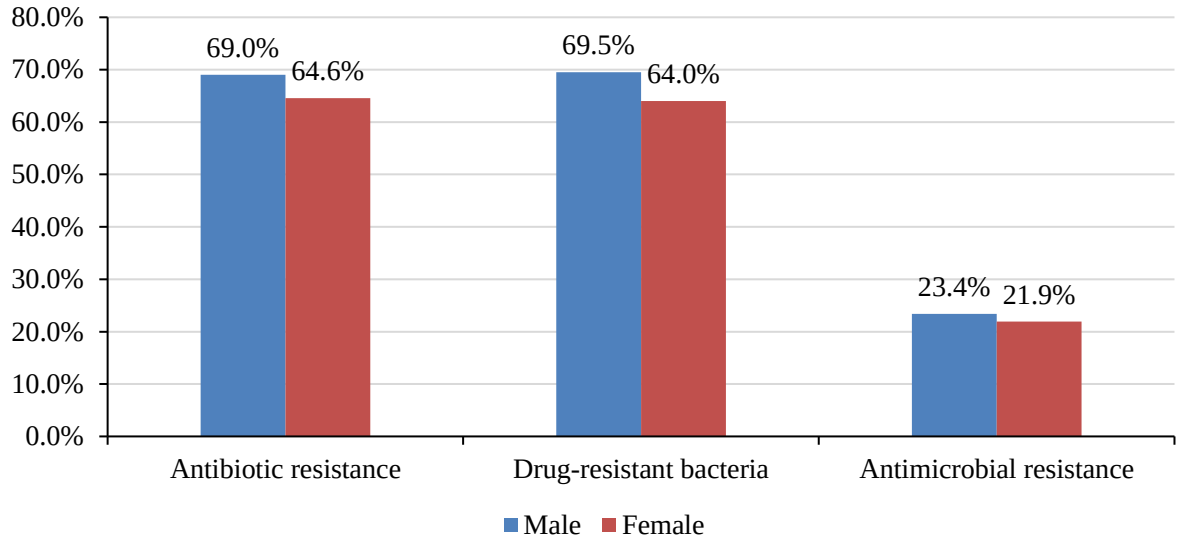
Figure 4.6.5a: Whether respondents had heard of the selected terms related to antimicrobial resistance (%)



Base(N): Persons aged 15 and over =1083.
Question: A17a-c "Have you heard of any of the following terms?"

There was no significant difference between gender in whether having heard of the selected terms related to antimicrobial resistance (Figure 4.6.5b; Table 4.6.5).

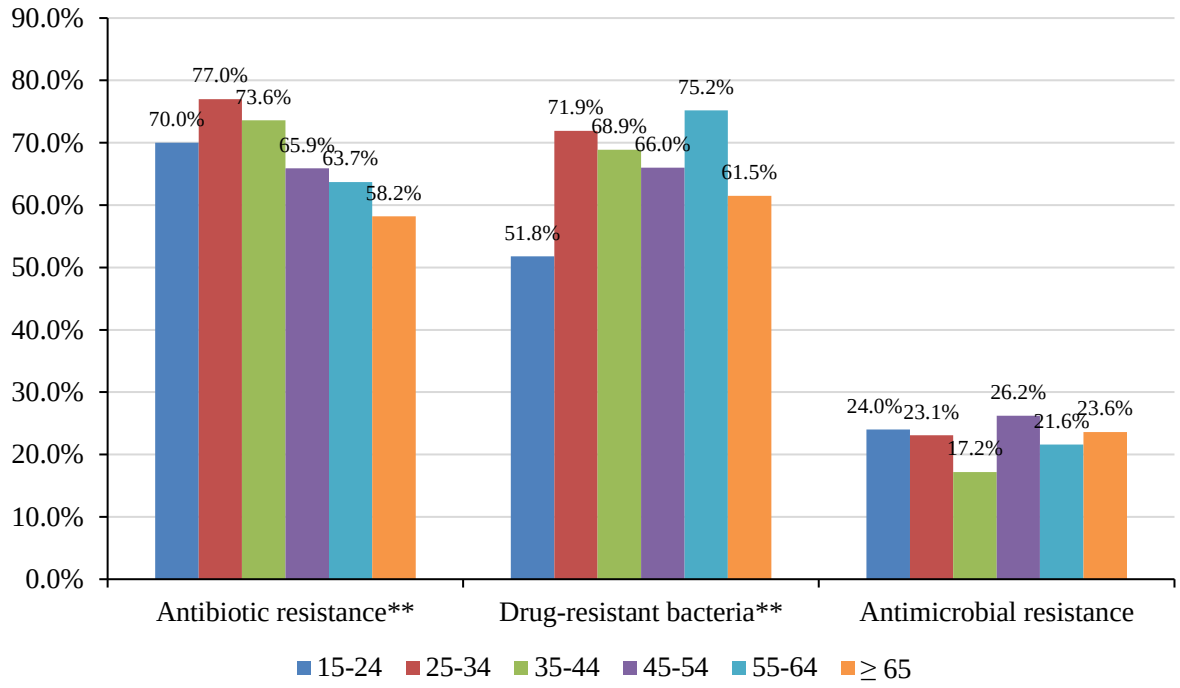
Figure 4.6.5b: Respondents who had heard of the selected terms related to antimicrobial resistance by gender (%)



*p<0.05, **p<0.01, ***p<0.001
Base: Persons aged 15 and over =1083.
Question: A17a-c "Have you heard of any of the following terms?"

Analysed by age, the percentages of having heard of "Antibiotic resistance" among respondents aged 65 or above were the lowest, whereas the youngest age group of 15 to 24 had the lowest percentage of having heard of "Drug-resistant bacteria" (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 (%)



*p<0.05, **p<0.01, ***p<0.001
Base: Persons aged 15 and over =1083.
Question: A17a-c "Have you heard of any of the following terms?"

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	69.5	64.0	51.8	71.9	68.9	66.0	75.2	61.5
No	29.9	35.1	48.2	28.1	31.1	33.1	23.8	36.8
Can't remember	0.5	1.0	0.0	0.0	0.0	0.9	1.0	1.6
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value(Chi-Square)	0.127		0.001**					
Antibiotic resistance								
Yes	69.0	64.6	70.0	77.0	73.6	65.9	63.7	58.2
No	30.5	34.2	30.0	23.0	25.6	33.7	34.6	40.5
Can't remember	0.5	1.1	0.0	0.0	0.8	0.4	1.7	1.3
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value(Chi-Square)	0.232		0.006**					
Antimicrobial resistance								
Yes	23.4	21.9	24.0	23.1	17.2	26.2	21.6	23.6
No	75.6	76.3	76.0	76.2	82.4	72.6	75.8	74.2
Can't remember	1.0	1.8	0.0	0.7	0.5	1.2	2.6	2.1
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value(Chi-Square)	0.498		0.353					

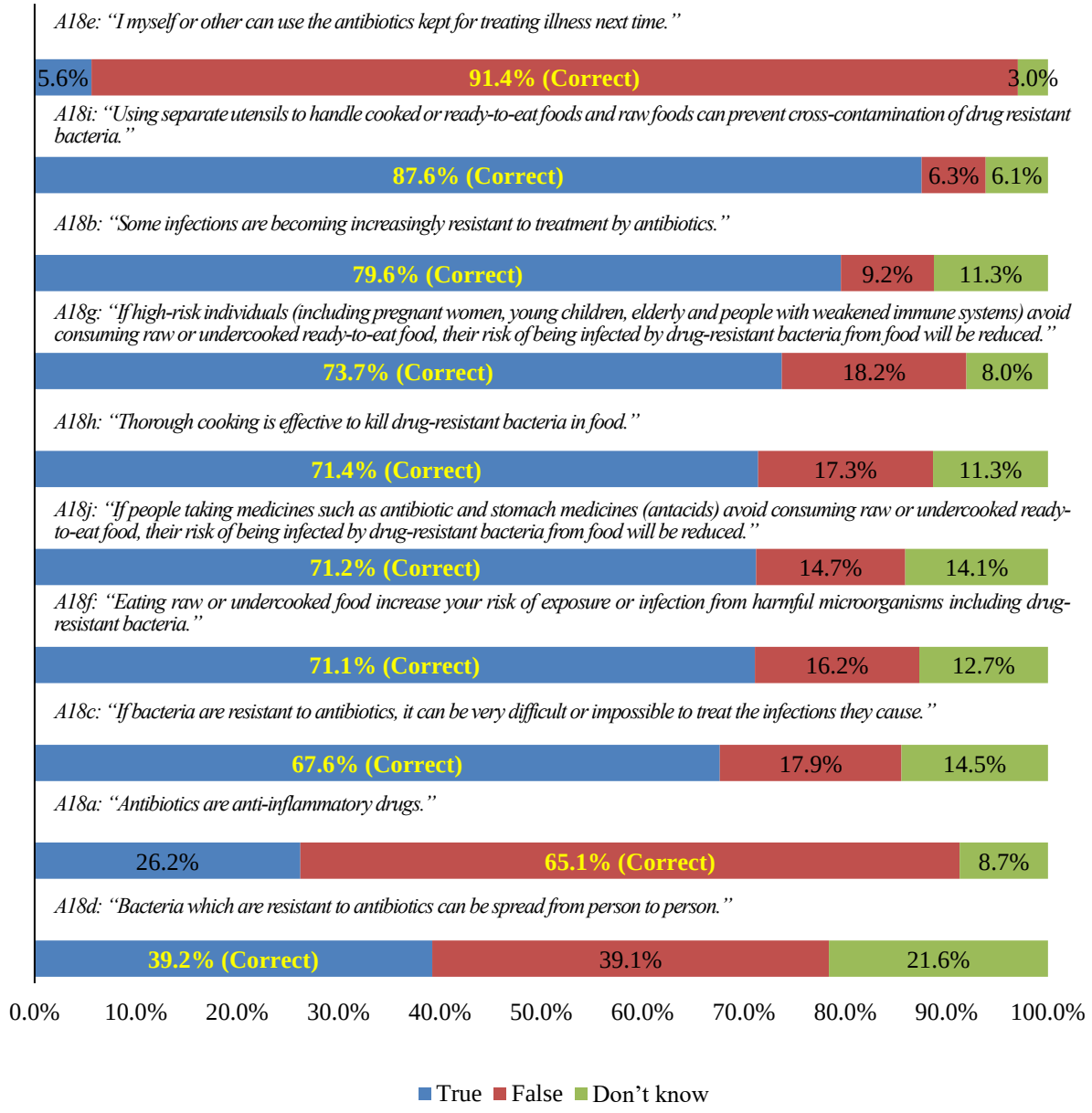
*p<0.05, **p<0.01, ***p<0.001
Question: A17a-c "Have you heard of any of the following terms?"

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: 91.4%);
b. Using separate utensils to handle cooked or ready-to-eat foods and raw foods can prevent cross-contamination of drug resistant bacteria (True: 87.6%);
c. Some infections are becoming increasingly resistant to treatment by antibiotics (True: 79.6%);
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 (True: 73.7%);
e. Thorough cooking is effective to kill drug-resistant bacteria in food. (True: 71.4%);
f. 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: 71.2%);
g. Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria (True: 71.1%);
h. If bacteria are resistant to antibiotics, it can be very difficult or impossible to treat the infections they cause (True: 67.6%);
i. Antibiotics are anti-inflammatory drugs (False: 65.1%); and
j. Bacteria which are resistant to antibiotics can be spread from person to person (True: 39.2%) (Figure 4.6.6a).

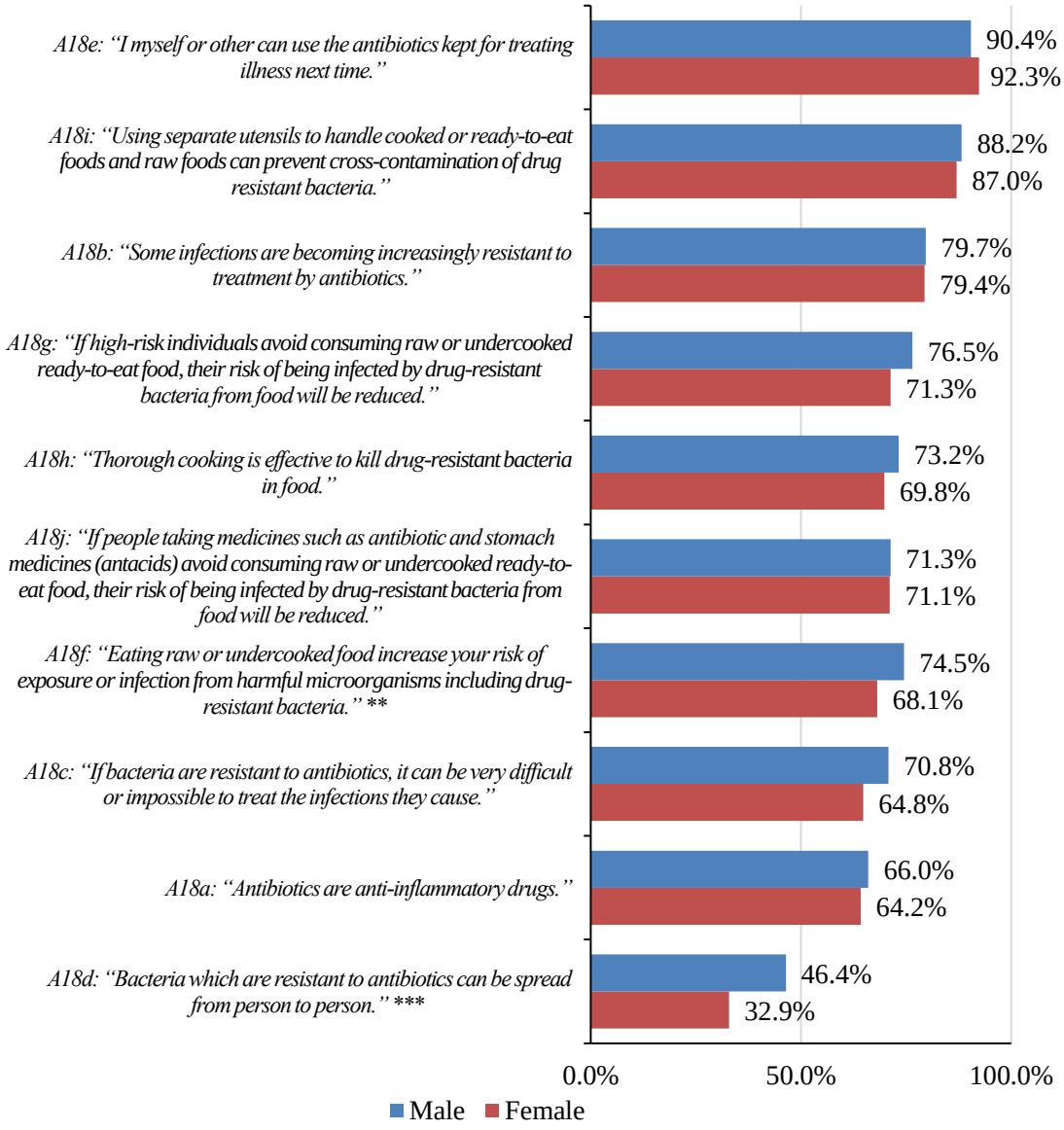
Figure 4.6.6a: Whether respondents thought the selected statements about antibiotic resistance as true or false (%)



Base: Persons aged 15 and over =1083.
Question: A18a-j "Please indicate whether you think the following statements are 'true' or 'false'."

Analysed by gender, male respondents were more likely to correctly identify the statement "Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria" and "Bacteria which are resistant to antibiotics can be spread from person to person" as true. Male and female respondents had no statistically significant difference in the other eight statements (Figure 4.6.6b; Table 4.6.6).

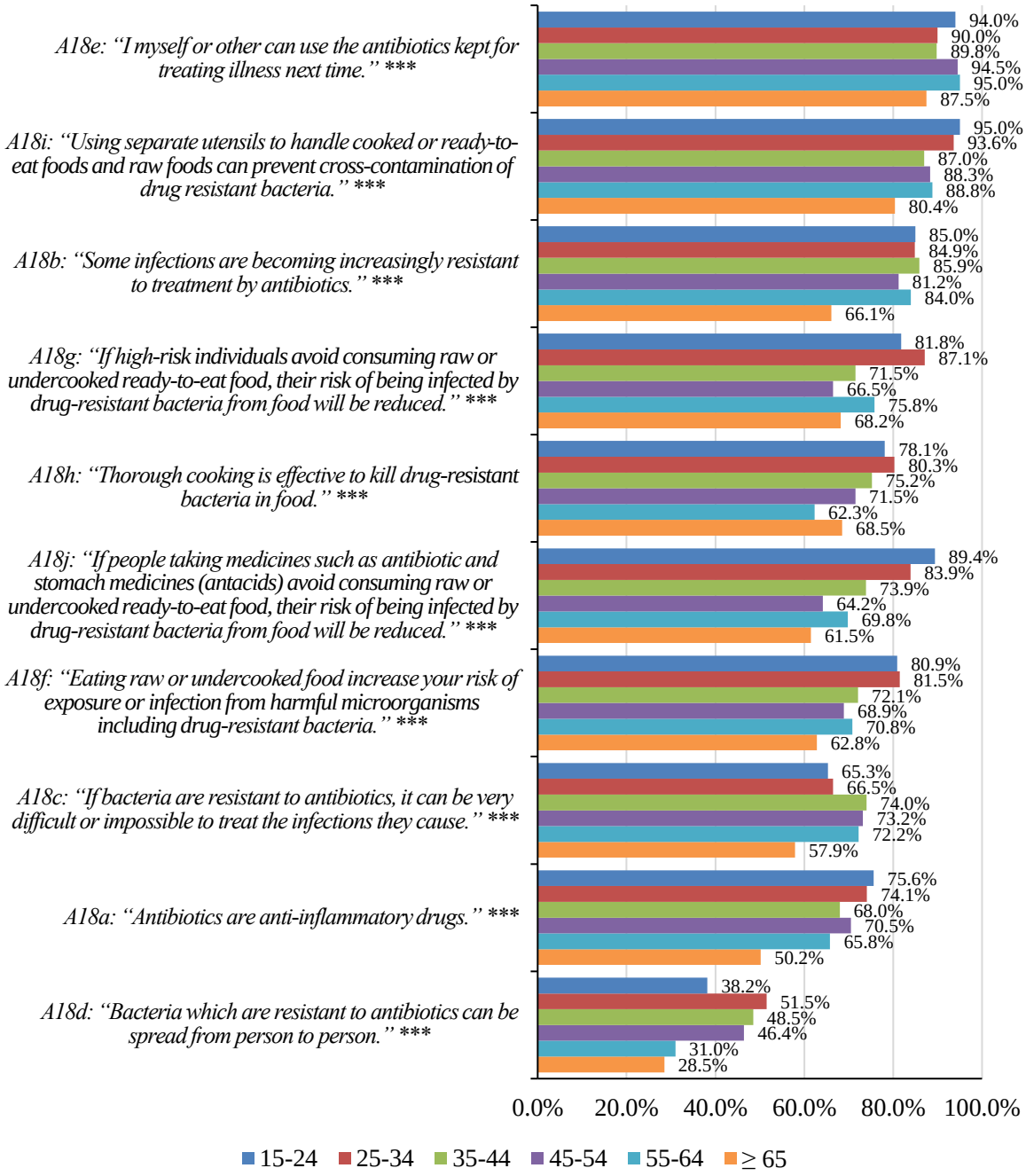
Figure 4.6.6b: Respondents who correctly indicated whether the selected statements about antibiotic resistance were true or false by gender (%)



*p<0.05, **p<0.01, ***p<0.001
Base: Persons aged 15 and over =1083.
Question: A18a-j "Please indicate whether you think the following statements are 'true' or 'false'."

Analysed by age, respondents aged 45 to 54 had the lowest percentage of correct answer to “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”, while those aged 55 to 64 had the lowest percentage of correct answer to “Thorough cooking is effective to kill drug-resistant bacteria in food”. Compared with other age group, respondents aged 65 or above had the lowest percentages of giving correct answers to the other eight statements (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 (%)



*p<0.05, **p<0.01, ***p<0.001
Base: Persons aged 15 and over =1083.
Question: A18a-j "Please indicate whether you think the following statements are 'true' or 'false'."

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	24.8	27.5	24.4	21.9	27.4	22.7	24.6	32.2
False (Correct)	66.0	64.2	75.6	74.1	68.0	70.5	65.8	50.2
Don't know	9.2	8.3	0.0	4.0	4.6	6.8	9.6	17.7
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.564		0.000***					
Some infections are becoming increasingly resistant to treatment by antibiotics								
True (Correct)	79.7	79.4	85.0	84.9	85.9	81.2	84.0	66.1
False	9.2	9.2	13.4	11.6	7.5	10.0	6.3	9.0
Don't know	11.1	11.4	1.5	3.6	6.5	8.8	9.7	24.9
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.987		0.000***					
If bacteria are resistant to antibiotics, it can be very difficult or impossible to treat the infections they cause								
True (Correct)	70.8	64.8	65.3	66.5	74.0	73.2	72.2	57.9
False	16.7	19.0	30.1	28.4	17.1	17.7	12.2	12.8
Don't know	12.5	16.2	4.6	5.2	8.9	9.1	15.7	29.4
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.089		0.000***					
Bacteria which are resistant to antibiotics can be spread from person to person								
True (Correct)	46.4	32.9	38.2	51.5	48.5	46.4	31.0	28.5
False	32.3	45.2	54.1	40.5	34.9	36.0	46.3	32.2
Don't know	21.3	21.9	7.7	8.0	16.5	17.6	22.8	39.2
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.000***		0.000***					

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

(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
I myself or other can use the antibiotics kept for treating illness next time								
True	5.6	5.6	6.0	5.3	9.8	4.6	3.0	5.6
False (Correct)	90.4	92.3	94.0	90.0	89.8	94.5	95.0	87.5
Don't know	4.0	2.0	0.0	4.7	0.5	0.9	1.9	6.8
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.160		0.000***					
Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria								
True (Correct)	74.5	68.1	80.9	81.5	72.1	68.9	70.8	62.8
False	12.4	19.6	11.1	11.3	19.5	18.7	15.3	17.8
Don't know	13.1	12.3	8.0	7.1	8.5	12.4	13.9	19.4
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.006**		0.0008***					
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)	76.5	71.3	81.8	87.1	71.5	66.5	75.8	68.2
False	15.6	20.5	17.1	11.5	20.8	21.2	20.2	17.2
Don't know	7.8	8.2	1.1	1.4	7.7	12.3	4.1	14.6
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.099		0.000***					

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

(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)	73.2	69.8	78.1	80.3	75.2	71.5	62.3	68.5
False	16.4	18.0	17.7	16.7	14.7	14.1	24.4	15.7
Don't know	10.4	12.2	4.2	2.9	10.1	14.4	13.4	15.8
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.448		0.000***					
Using separate utensils to handle cooked or ready-to-eat foods and raw foods can prevent cross-contamination of drug resistant bacteria								
True (Correct)	88.2	87.0	95.0	93.6	87.0	88.3	88.8	80.4
False	5.7	6.9	5.0	4.4	7.9	6.6	7.0	6.0
Don't know	6.1	6.2	0.0	2.0	5.1	5.0	4.2	13.5
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.718		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)	71.3	71.1	89.4	83.9	73.9	64.2	69.8	61.5
False	14.2	15.3	5.6	9.4	16.3	20.1	15.7	15.7
Don't know	14.5	13.6	5.0	6.7	9.8	15.7	14.5	22.8
Sample size	(510)	(573)	(101)	(147)	(173)	(184)	(207)	(271)
p-value (Chi-Square)	0.829		0.000***					

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

5. Further Analysis and Discussion

5.1 Comparative Analysis with Previous Results (2022 round)

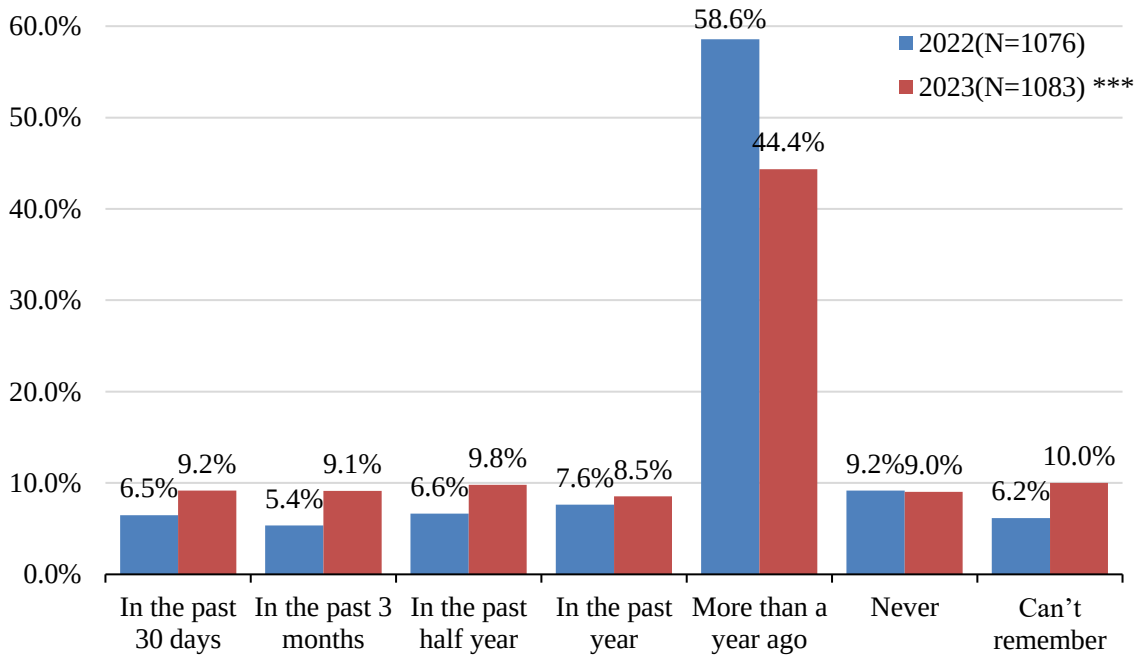
The findings of the comparative analysis with the 2022 survey were presented in this chapter.[2] The new questions in the 2023 survey which were not in the 2022 survey were not discussed in the analysis.

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

5.1.1 Time of last taken antibiotics

The proportion of respondents who had taken antibiotics in the past 12 months before enumeration increased from 26.1% in 2022 to 36.6% in 2023 (Figure 5.1.1a; Table 5.1.1a).

Figure 5.1.1a: Time of last taken antibiotics by year (%)



Base(N): Persons aged 15 and over.
*p<0.05, **p<0.01, ***p<0.001
Question: A1 "When did you last take antibiotics?"

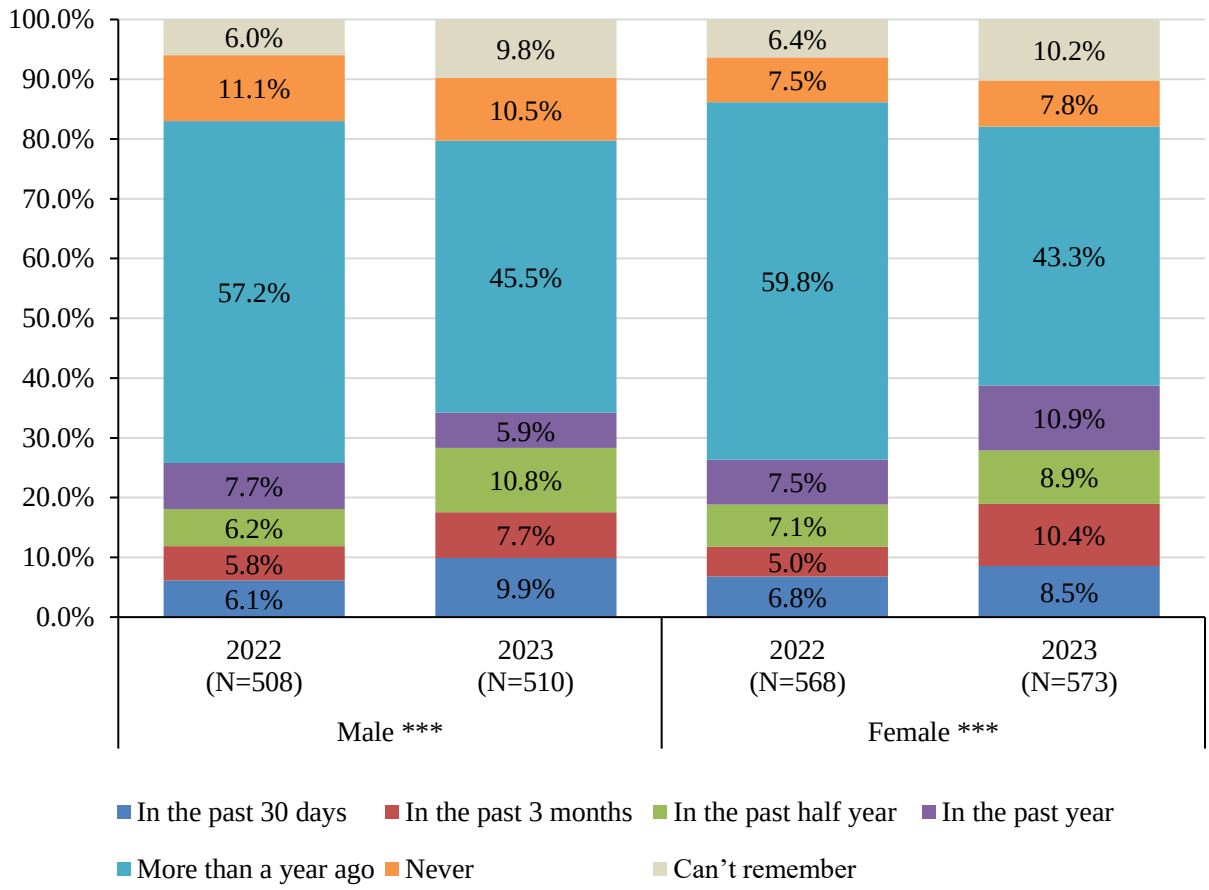
Table 5.1.1a: Time of last taken antibiotics by year (%)

	Year	
	2022	2023
In the past 30 days	6.5	9.2
In the past 3 months	5.4	9.1
In the past half year	6.6	9.8
In the past year	7.6	8.5
More than a year ago	58.6	44.4
Never	9.2	9.0
Can't remember	6.2	10.0
Sample size	(1076)	(1083)
p-value (Chi-Square)	0.000***	

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

Compared to the 2022 survey results, the proportion of male respondents who had taken antibiotics in the past 12 months before enumeration increased from 25.8% in 2022 to 34.2% in 2023. As for female respondents, the proportion increased from 26.3% to 38.8% (Figure 5.1.1b; Table 5.1.1b).

Figure 5.1.1b: Time of last taken antibiotics by gender and year (%)



Base(N): Persons aged 15 and over.
*p<0.05, **p<0.01, ***p<0.001
Question: A1 "When did you last take antibiotics?"

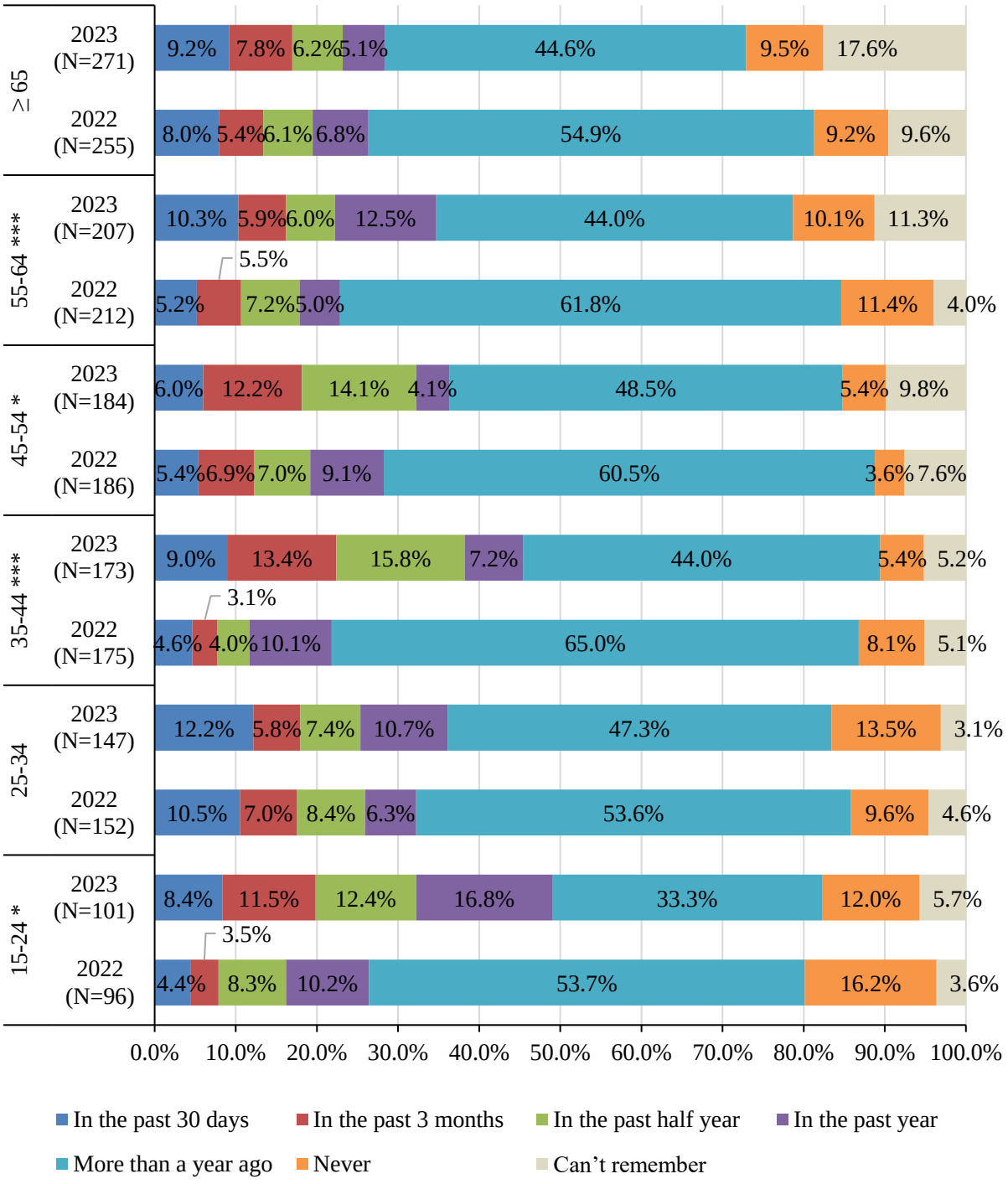
Table 5.1.1b: Time of last taken antibiotics by gender and year (%)

	Male		Female	
	2022	2023	2022	2023
In the past 30 days	6.1	9.9	6.8	8.5
In the past 3 months	5.8	7.7	5.0	10.4
In the past half year	6.2	10.8	7.1	8.9
In the past year	7.7	5.9	7.5	10.9
More than a year ago	57.2	45.5	59.8	43.3
Never	11.1	10.5	7.5	7.8
Can't remember	6.0	9.8	6.4	10.2
Sample size	(508)	(510)	(568)	(573)
p-value (Chi-Square)	0.000***		0.000***	

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

Compared to the 2022 survey results, the proportion of those aged 15-24, 35-44, 45-54 and 55-64 who had taken antibiotics in the past 12 months before enumeration increased from 26.4%, 21.8%, 28.3% and 22.9% in 2022 to 49.0%, 45.4%, 36.3%, 34.7% in 2023 respectively. In those aged between 25 and 34 and 65 or above, the difference between 2022 and 2023 was statistically insignificant (Figure 5.1.1c; Table 5.1.1c).

Figure 5.1.1c: Time of last taken antibiotics by age and year (%)



Base(N): Persons aged 15 and over.
*p<0.05, **p<0.01, ***p<0.001
Question: A1 "When did you last take antibiotics?"

Table 5.1.1c: Time of last taken antibiotics by age and year (%)

	15-24		25-34		35-44		45-54		55-64		≥ 65	
	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023
In the past 30 days	4.4	8.4	10.5	12.2	4.6	9.0	5.4	6.0	5.2	10.3	8.0	9.2
In the past 3 months	3.5	11.5	7.0	5.8	3.1	13.4	6.9	12.2	5.5	5.9	5.4	7.8
In the past half year	8.3	12.4	8.4	7.4	4.0	15.8	7.0	14.1	7.2	6.0	6.1	6.2
In the past year	10.2	16.8	6.3	10.7	10.1	7.2	9.1	4.1	5.0	12.5	6.8	5.1
More than a year ago	53.7	33.3	53.6	47.3	65.0	44.0	60.5	48.5	61.8	44.0	54.9	44.6
Never	16.2	12.0	9.6	13.5	8.1	5.4	3.6	5.4	11.4	10.1	9.2	9.5
Can't remember	3.6	5.7	4.6	3.1	5.1	5.2	7.6	9.8	4.0	11.3	9.6	17.6
Sample size	(96)	(101)	(152)	(147)	(175)	(173)	(186)	(184)	(212)	(207)	(255)	(271)
p-value (Chi-Square)	0.035*		0.648		0.000***		0.025*		0.000***		0.091	

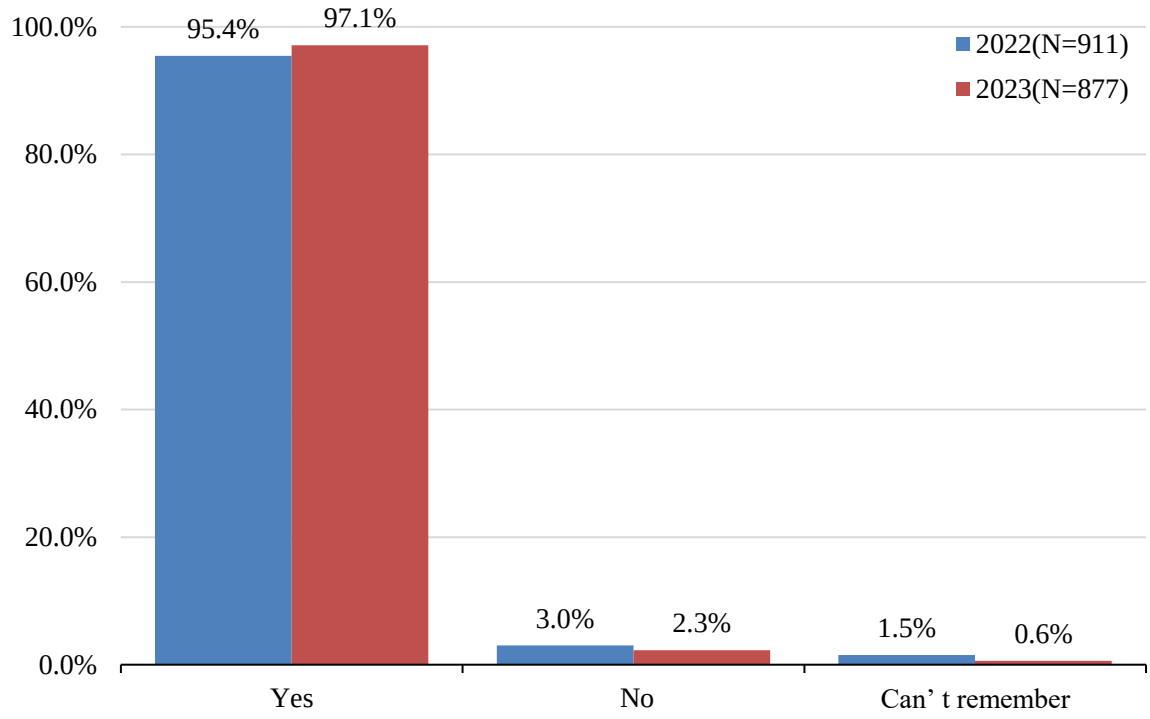
*p<0.05, **p<0.01, ***p<0.001

Question: A1 "When did you last take antibiotics?"

5.1.2 Whether the last taken antibiotics were prescribed by doctors

As to whether the last taken antibiotics were prescribed by doctors, there was no statistically significant difference between 2022 and 2023 (Figure 5.1.2a; Table 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.
*p<0.05, **p<0.01, ***p<0.001
Question: A2 "On that occasion, were the antibiotics prescribed by doctors?"

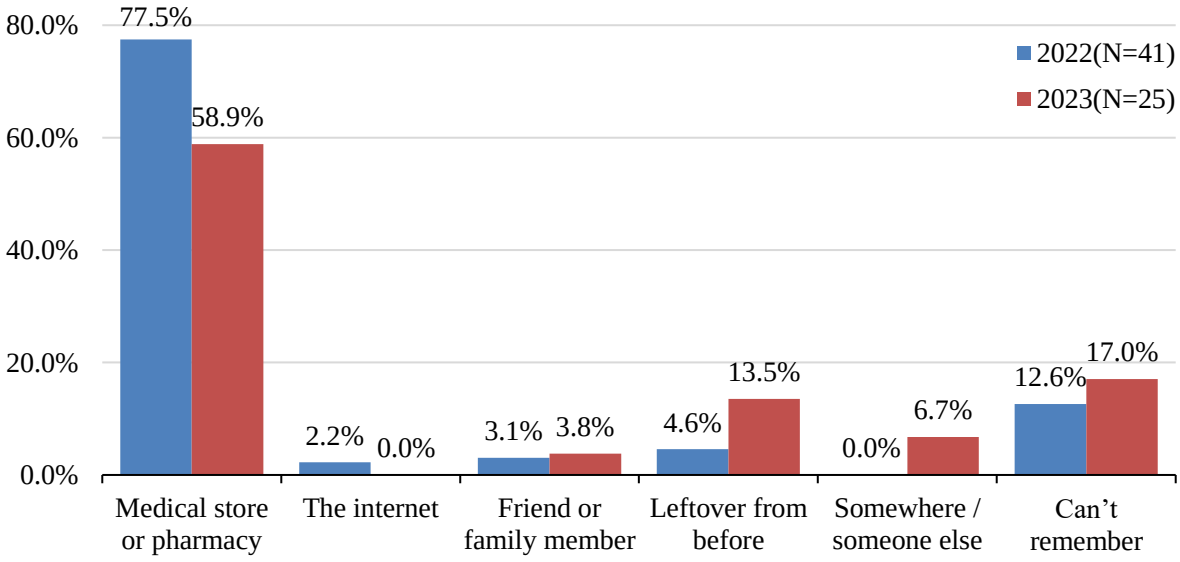
Table 5.1.2a: Whether the last taken antibiotics were prescribed by doctors by year (%)

	Year	
	2022	2023
Yes	95.4	97.1
No	3.0	2.3
Can't remember	1.5	0.6
Sample size	(911)	(877)
p-value (Chi-Square)	0.098	

*p<0.05, **p<0.01, ***p<0.001
Question: A2 "On that occasion, were the antibiotics prescribed by doctors?"

For those whose last taken antibiotics were not or could not remember if prescribed by doctors, no statistically significant difference was found in the major source of the last taken antibiotics between 2022 and 2023 (Figure 5.1.2b; Table 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 a doctor.
*p<0.05, **p<0.01, ***p<0.001
Question: A3 "On that occasion, where did you get the antibiotics?"

Table 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 (%)

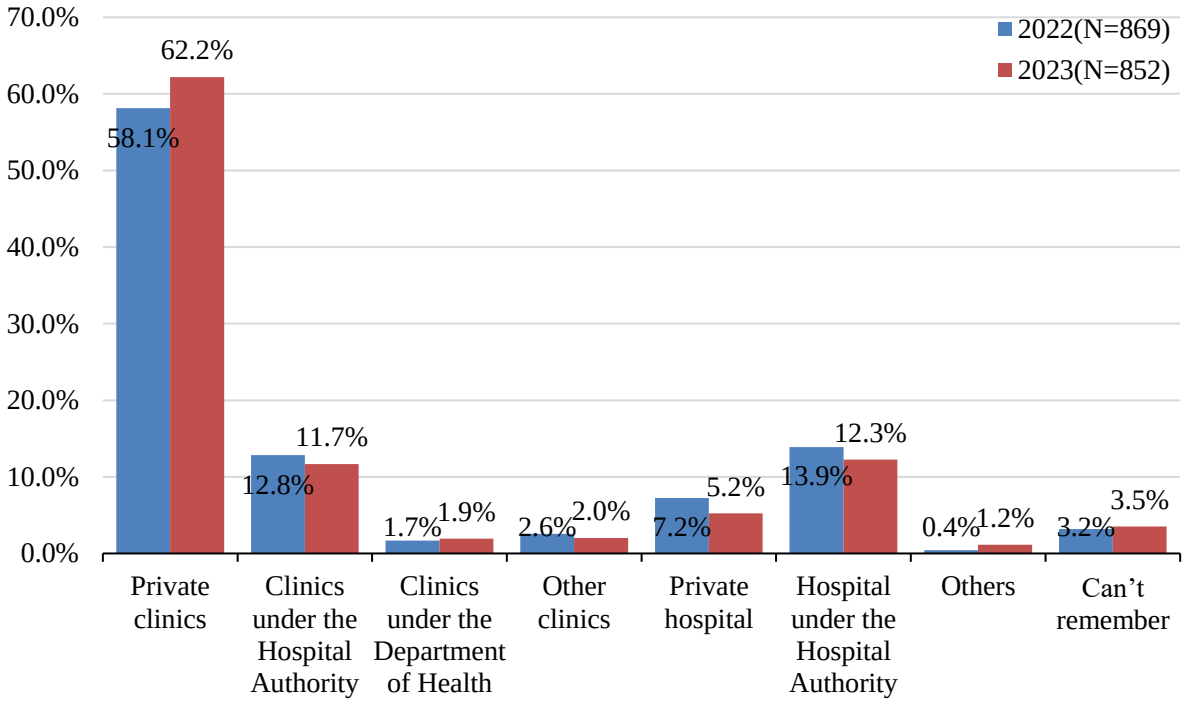
	Year	
	2022	2023
Medical store or pharmacy	77.5	58.9
The internet	2.2	0.0
Friend or family member	3.1	3.8
Leftover from before	4.6	13.5
Somewhere / someone else	0.0	6.7
Can't remember	12.6	17.0
Sample size	(41)	(25)
p-value (Chi-Square)	0.310	

*p<0.05, **p<0.01, ***p<0.001
Question: A3 "On that occasion, where did you get the antibiotics?"

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

There was no statistically significant difference in the type of clinic or hospital respondents whose last taken antibiotics were prescribed by doctors, got the last taken antibiotics from between 2022 and 2023 (Figure 5.1.3; Table 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.
*p<0.05, **p<0.01, ***p<0.001
Question: A4 "On that occasion, from which type of clinic or hospital did you get the antibiotics?"

Table 5.1.3: Type of clinic or hospital respondents got the last taken antibiotics from by year (%)

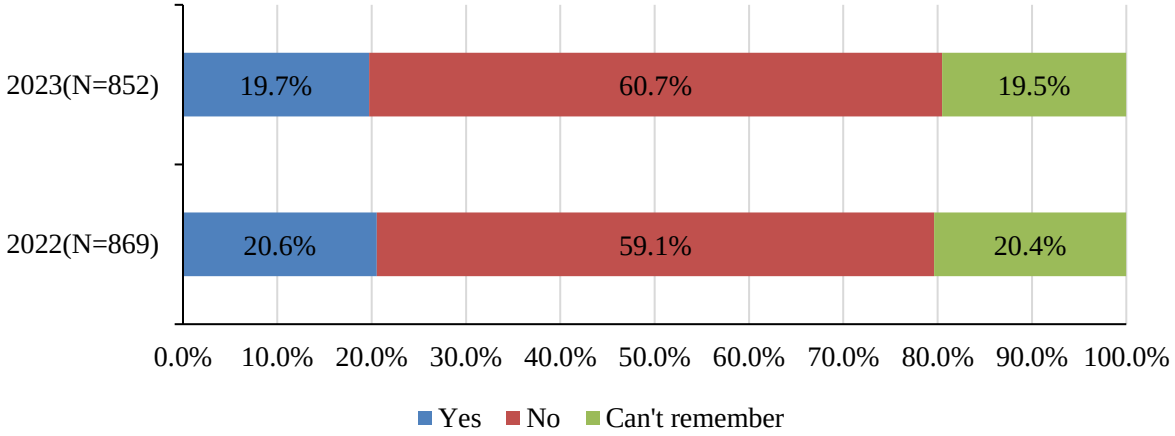
	Year	
	2022	2023
Private clinics	58.1	62.2
Clinics under the Hospital Authority	12.8	11.7
Clinics under the Department of Health	1.7	1.9
Other clinics	2.6	2.0
Private hospital	7.2	5.2
Hospital under the Hospital Authority	13.9	12.3
Others	0.4	1.2
Can't remember	3.2	3.5
Sample size	(869)	(852)
p-value (Chi-Square)	0.263	

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

5.1.4 Whether respondents noticed the health advice on antibiotics medicine bags

As to whether respondents whose last taken antibiotics were prescribed by doctors noticed the instructions on antibiotics medicine bags, there was no statistically significant difference between 2022 and 2023 (Figure 5.1.4; Table 5.1.4).

Figure 5.1.4: 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.
*p<0.05, **p<0.01, ***p<0.001
Question: A5 "On that occasion, did you notice there are instructions on personal hygiene on the antibiotics medicine bags?"

Table 5.1.4: Whether respondents noticed the instructions on antibiotics medicine bags by year (%)

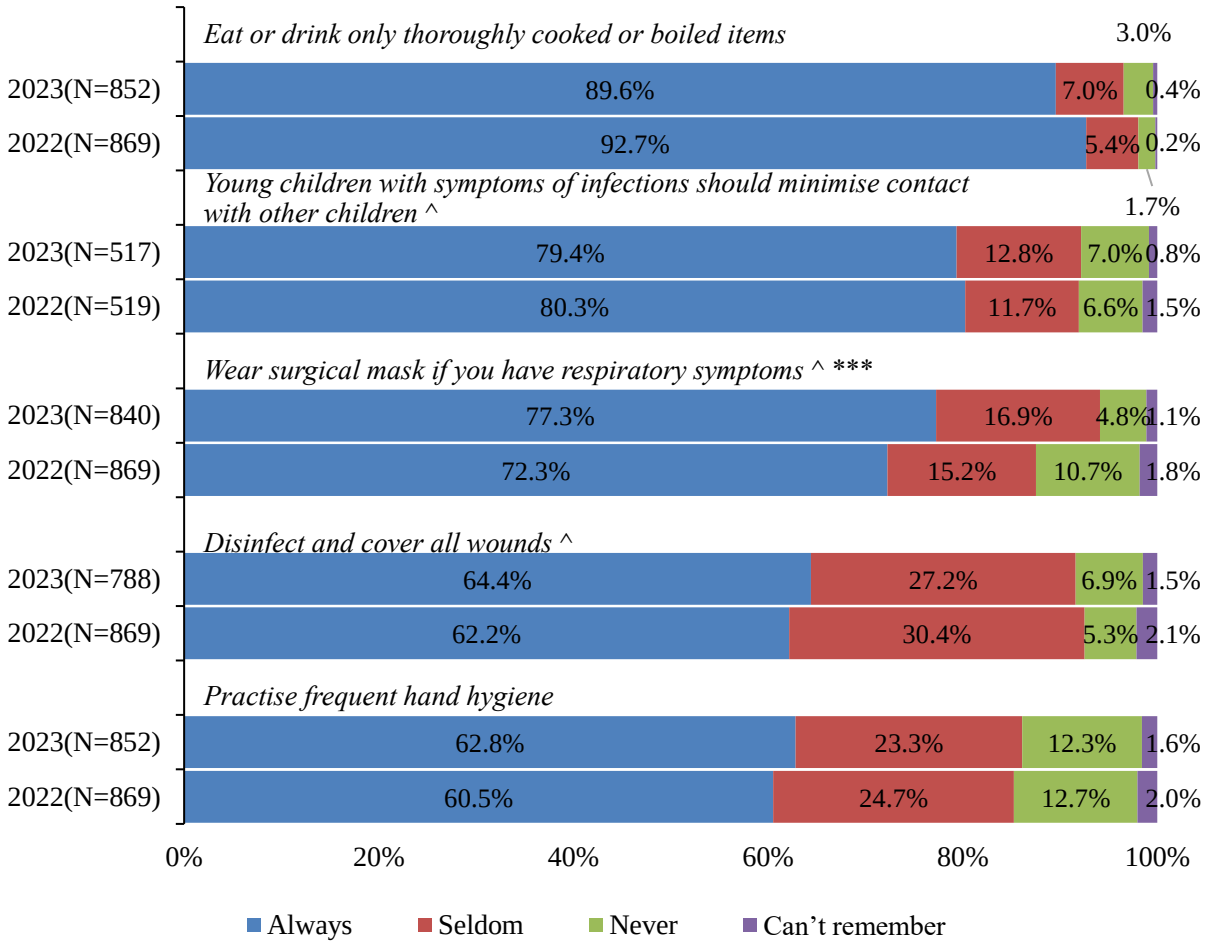
	Year	
	2022	2023
Yes	20.6	19.7
No	59.1	60.7
Can't remember	20.4	19.5
Sample size	(869)	(852)
p-value (Chi-Square)	0.778	

*p<0.05, **p<0.01, ***p<0.001
Question: A5 "On that occasion, did you notice there are instructions on personal hygiene on the antibiotics medicine bags?"

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

When handling or taking antibiotics in daily life during the last medication period, the percentage of respondents whose antibiotics last taken were prescribed by doctors always wearing surgical mask when they have respiratory symptoms increased from 72.3% in 2022 to 77.3% in 2023. There was no statistically significant difference in the frequency of practising other health advice during the last medication period between 2022 and 2023 (Figure 5.1.5a; Table 5.1.5a).

Figure 5.1.5a: 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.
*p<0.05, **p<0.01, ***p<0.001
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 young children at home/no respiratory symptoms/no wounds were excluded.

Table 5.1.5a: Frequency of practising the health advice during the last medication period by year (%)

	Year	
	2022	2023
Practise frequent hand hygiene		
Always	60.5	62.8
Seldom	24.7	23.3
Never	12.7	12.3
Can't remember	2.0	1.6
Sample size	(869)	(852)
p-value (Chi-Square)	0.732	
Eat or drink only thoroughly cooked or boiled items		
Always	92.7	89.6
Seldom	5.4	7.0
Never	1.7	3.0
Can't remember	0.2	0.4
Sample size	(869)	(852)
p-value (Chi-Square)	0.111	
Disinfect and cover all wounds ^		
Always	62.2	64.4
Seldom	30.4	27.2
Never	5.3	6.9
Can't remember	2.1	1.5
Sample size	(869)	(788)
p-value (Chi-Square)	0.219	

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

(To be continued)

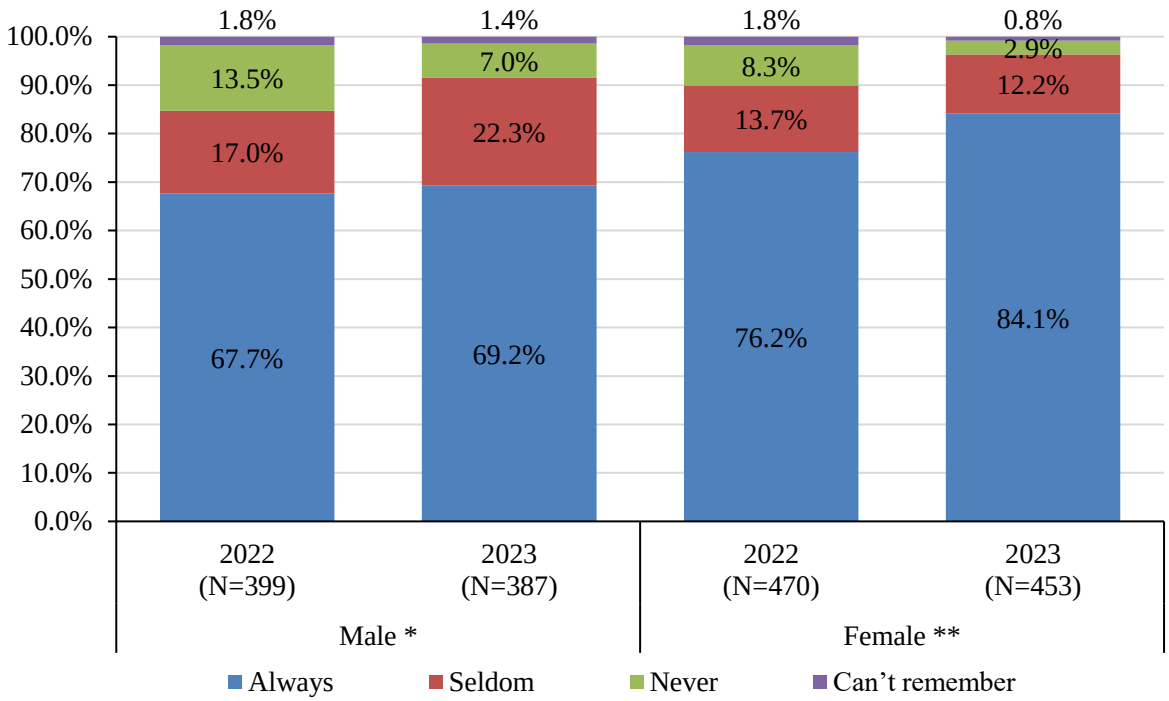
Table 5.1.5a: Frequency of practising the health advice during the last medication period by year (%) (Continued)

	Year	
	2022	2023
Wear surgical mask if you have respiratory symptoms ^		
Always	72.3	77.3
Seldom	15.2	16.9
Never	10.7	4.8
Can't remember	1.8	1.1
Sample size	(869)	(840)
p-value (Chi-Square)	0.000***	
Young children with symptoms of infections should minimise contact with other children ^		
Always	80.3	79.4
Seldom	11.7	12.8
Never	6.6	7.0
Can't remember	1.5	0.8
Sample size	(519)	(517)
p-value (Chi-Square)	0.722	

*p<0.05, **p<0.01, ***p<0.001
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 young children at home/no respiratory symptoms/no wounds were excluded.

Compared to the 2022 survey results, the percentage of always wearing surgical masks for males and females increased from 67.7% in 2022 to 69.2% in 2023, and from 76.2% in 2022 to 84.1% in 2023 respectively (Figure 5.1.1b; Table 5.1.1b).

Figure 5.1.5b: Frequency of wearing surgical mask when they have respiratory symptoms during the last medication period by gender and year (%)



Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors.
*p<0.05, **p<0.01, ***p<0.001
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 were excluded.

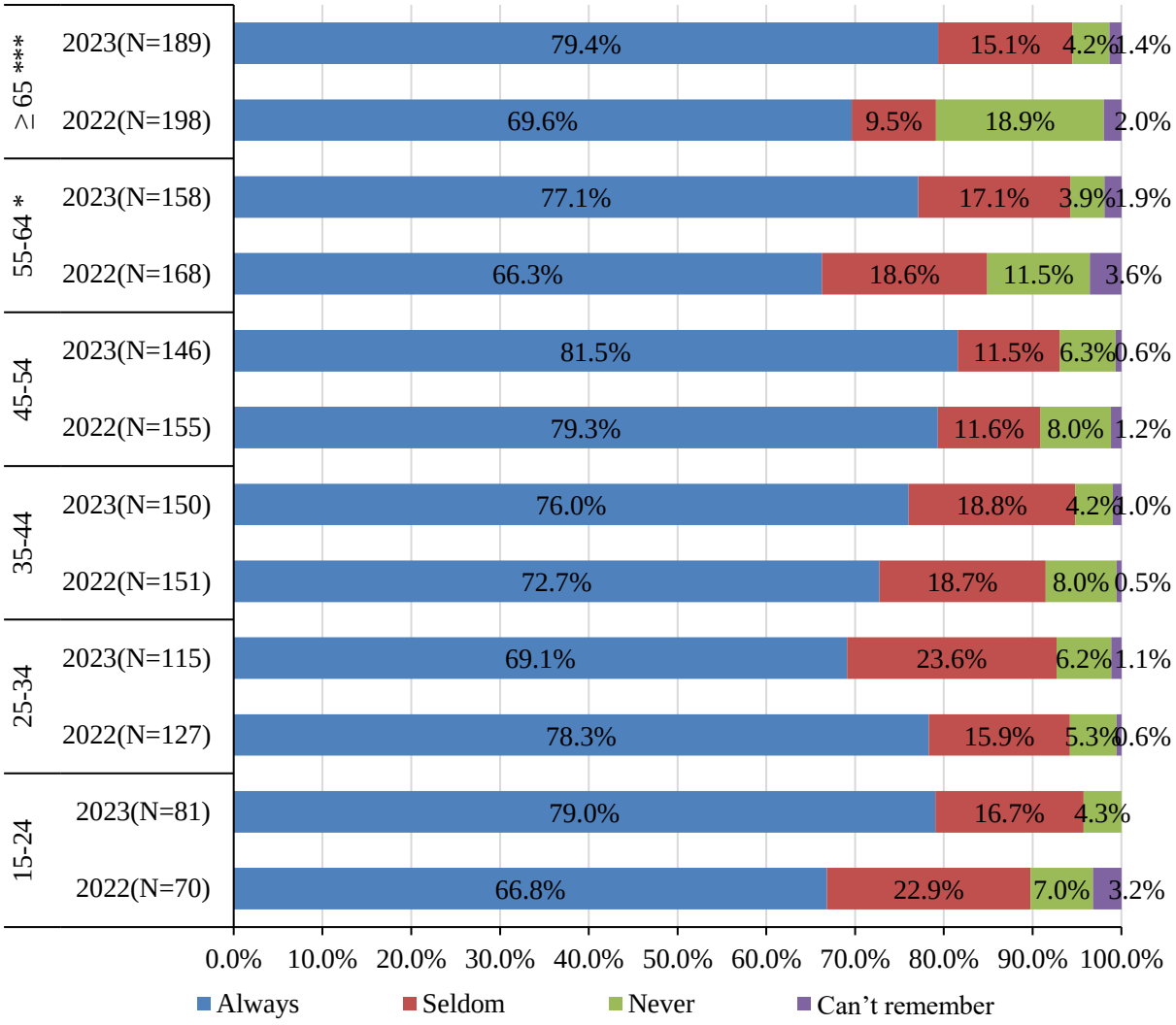
Table 5.1.5b: Frequency of wearing surgical mask when they have respiratory symptoms during the last medication period by gender and year (%)

	Male		Female	
	2022	2023	2022	2023
Wear surgical mask if you have respiratory symptoms ^				
Always	67.7	69.2	76.2	84.1
Seldom	17.0	22.3	13.7	12.2
Never	13.5	7.0	8.3	2.9
Can't remember	1.8	1.4	1.8	0.8
Sample size	(399)	(387)	(470)	(453)
p-value (Chi-Square)	0.011*		0.001**	

*p<0.05, **p<0.01, ***p<0.001
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 were excluded.

Compared to the 2022 survey results, the percentage of always wearing surgical masks for those aged 55-64 and 65 or above increased from 66.3% in 2022 to 77.1% in 2023, and 69.6% in 2022 to 79.4% in 2023 respectively. There was no statistically significant difference for those aged 54 or below between 2022 and 2023 (Figure 5.1.1c; Table 5.1.1c).

Figure 5.1.5c: Frequency of wearing surgical mask when they have respiratory symptoms during the last medication period by age and year (%)



Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors.
*p<0.05, **p<0.01, ***p<0.001
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 were excluded.

Table 5.1.5c: Frequency of wearing surgical mask when they have respiratory symptoms during the last medication period by age and year (%)

	15-24		25-34		35-44		45-54		55-64		≥ 65	
	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023
Wear surgical mask if you have respiratory symptoms ^												
Always	66.8	79.0	78.3	69.1	72.7	76.0	79.3	81.5	66.3	77.1	69.6	79.4
Seldom	22.9	16.7	15.9	23.6	18.7	18.8	11.6	11.5	18.6	17.1	9.5	15.1
Never	7.0	4.3	5.3	6.2	8.0	4.2	8.0	6.3	11.5	3.9	18.9	4.2
Can't remember	3.2	0.0	0.6	1.1	0.5	1.0	1.2	0.6	3.6	1.9	2.0	1.4
Sample size	(70)	(81)	(127)	(115)	(151)	(150)	(155)	(146)	(168)	(158)	(198)	(189)
p-value (Chi-Square)	0.202		0.412		0.561		0.899		0.038*		0.000***	

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

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?"

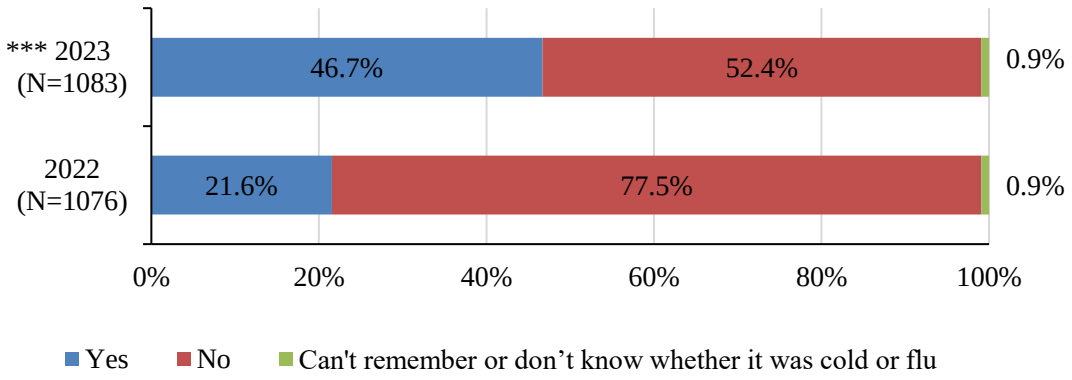
Note: ^Those with no respiratory symptoms were excluded.

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

5.1.6.1 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 46.7% in 2023 (Figure 5.1.6.1a; Table 5.1.6.1a).

Figure 5.1.6.1a: Whether respondents had consulted doctor(s) for cold or flu in the past 12 months by year (%)



Base(N): Persons aged 15 and over.
*p<0.05, **p<0.01, ***p<0.001
Question: A11"In the past 12 months, had you consulted doctor(s) for cold or flu?"

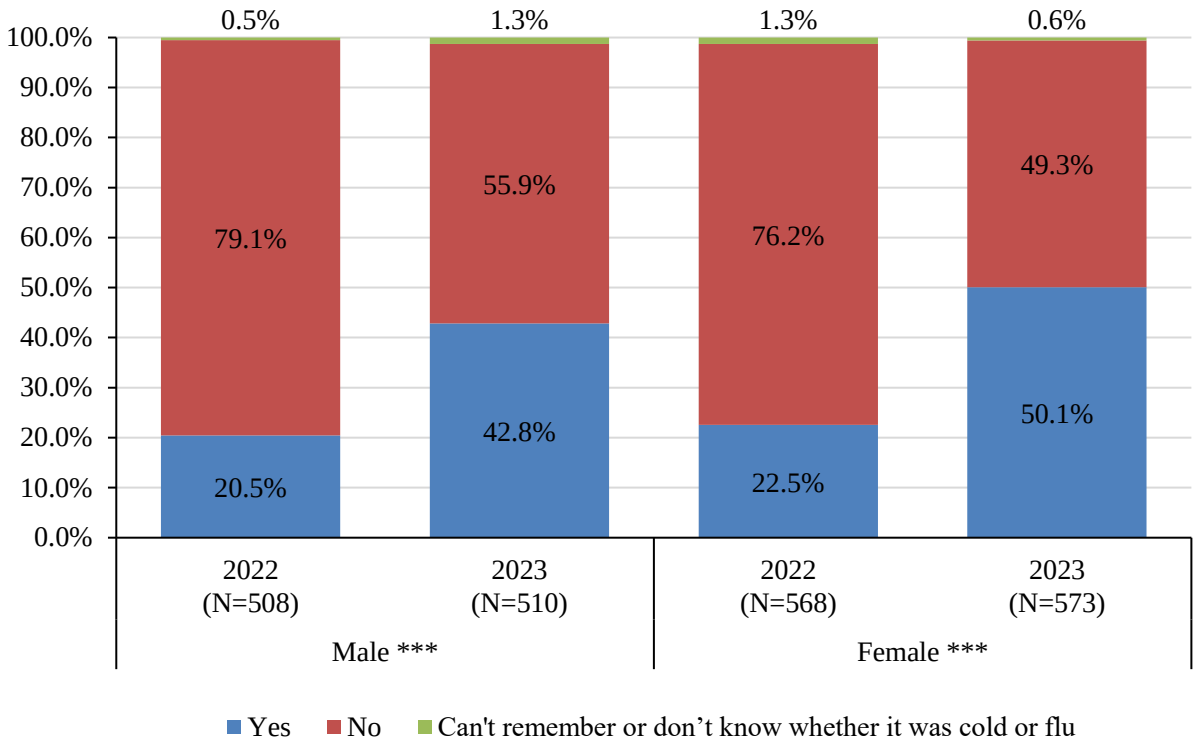
Table 5.1.6.1a: Whether respondents had consulted doctor(s) for cold or flu in the past 12 months by year (%)

	Year	
	2022	2023
Yes	21.6	46.7
No	77.5	52.4
Can't remember or don't know whether it was cold or flu	0.9	0.9
Sample size	(1076)	(1083)
p-value (Chi-Square)	0.000***	

*p<0.05, **p<0.01, ***p<0.001
Question: A11 "In the past 12 months, had you consulted doctor(s) for cold or flu?"

Compared to the 2022 survey results, the proportion of male respondents who had consulted doctors for cold or flu in the past 12 months increased markedly from 20.5% in 2022 to 42.8% in 2023. As for female respondents, the proportion increased from 22.5% in 2022 to 50.1% in 2023 (Figure 5.1.6.1b; Table 5.1.6.1b).

Figure 5.1.6.1b: Whether respondents had consulted doctor(s) for cold or flu in the past 12 months by gender and year (%)



Base(N): Persons aged 15 and over.
*p<0.05, **p<0.01, ***p<0.001
Question: A11"In the past 12 months, had you consulted doctor(s) for cold or flu?"

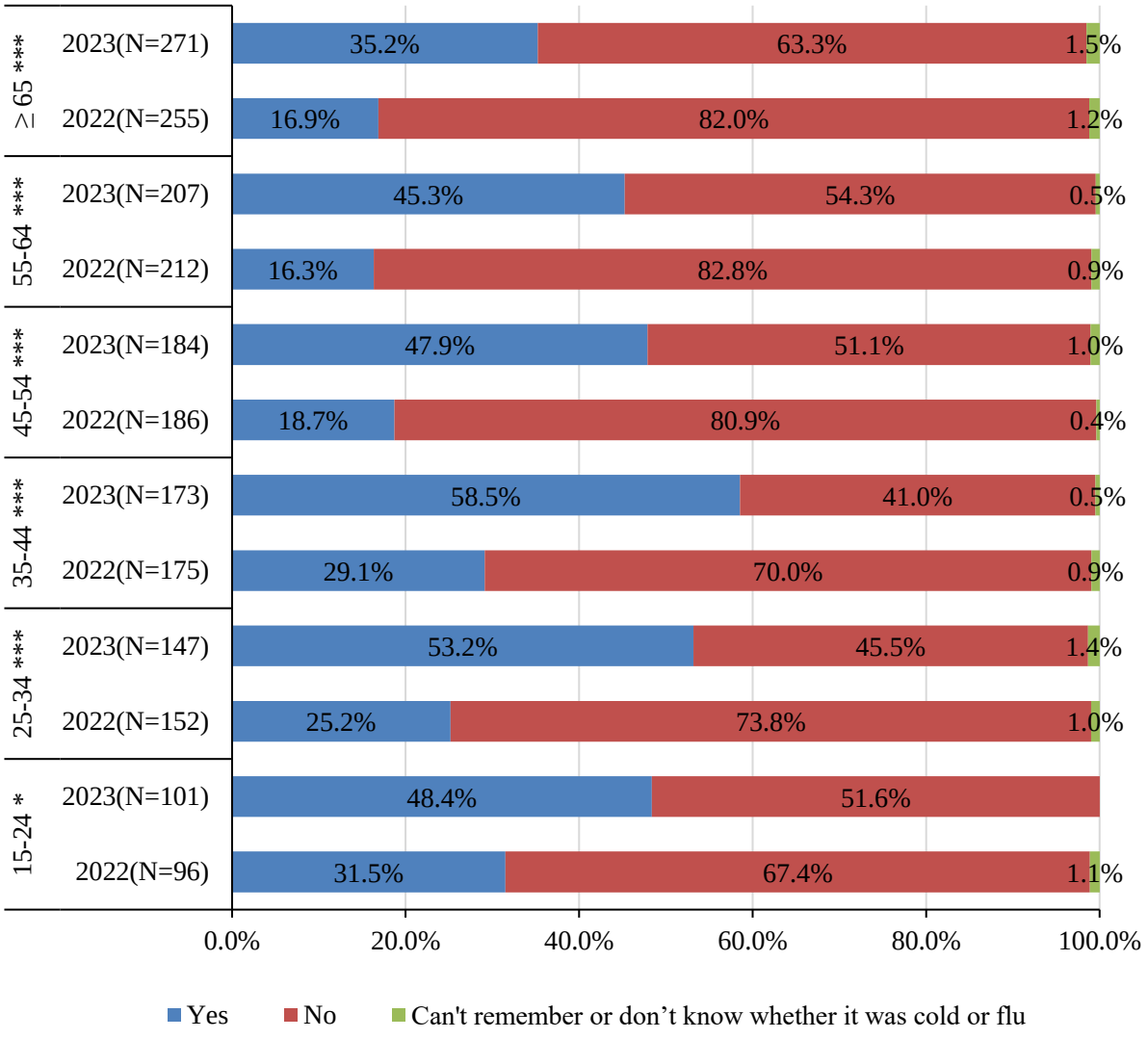
Table 5.1.6.1b: Whether respondents had consulted doctor(s) for cold or flu in the past 12 months by gender and year (%)

	Male		Female	
	2022	2023	2022	2023
Yes	20.5	42.8	22.5	50.1
No	79.1	55.9	76.2	49.3
Can't remember or don't know whether it was cold or flu	0.5	1.3	1.3	0.6
Sample size	(508)	(510)	(568)	(573)
p-value (Chi-Square)	0.000***		0.000***	

*p<0.05, **p<0.01, ***p<0.001
Question: A11 "In the past 12 months, had you consulted doctor(s) for cold or flu?"

Compared to the 2022 survey results, among those aged 15-24, 25-34, 35-44, 45-54, 55-64 and 65 or above, the proportion of respondents who had consulted doctors for cold and flu in the past 12 months increased from 31.5%, 25.2%, 29.1%, 18.7%, 16.3% and 16.9% in 2022 to 48.4%, 53.2%, 58.5%, 47.9%, 45.3% and 35.2% in 2023 respectively (Figure 5.1.6.1c; Table 5.1.6.1c).

Figure 5.1.6.1c: Whether respondents had consulted doctor(s) for cold or flu in the past 12 months by age and year (%)



Base(N): Persons aged 15 and over.
*p<0.05, **p<0.01, ***p<0.001
Question: A11"In the past 12 months, had you consulted doctor(s) for cold or flu?"

Table 5.1.6.1c: Whether respondents had consulted doctor(s) for cold or flu in the past 12 months by age and year (%)

	15-24		25-34		35-44		45-54		55-64		≥ 65	
	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023
Yes	31.5	48.4	25.2	53.2	29.1	58.5	18.7	47.9	16.3	45.3	16.9	35.2
No	67.4	51.6	73.8	45.5	70.0	41.0	80.9	51.1	82.8	54.3	82.0	63.3
Can't remember or don't know whether it was cold or flu	1.1	0.0	1.0	1.4	0.9	0.5	0.4	1.0	0.9	0.5	1.2	1.5
Sample size	(96)	(101)	(152)	(147)	(175)	(173)	(186)	(184)	(212)	(207)	(255)	(271)
p-value (Chi-Square)	0.036*		0.000***		0.000***		0.000***		0.000***		0.000***	

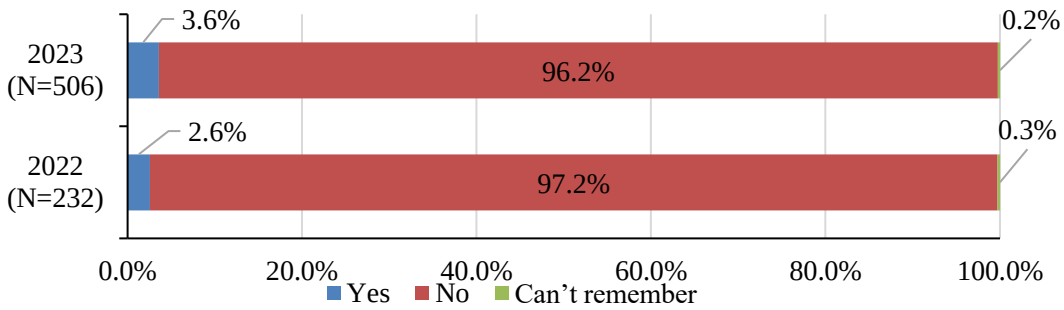
*p<0.05, **p<0.01, ***p<0.001

Question: A11 "In the past 12 months, had you consulted doctor(s) for cold or flu?"

5.1.6.2 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, no statistically significant difference was found between 2022 and 2023 (Figure 5.1.6.2; Table 5.1.6.2).

Figure 5.1.6.2: 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.
*p<0.05, **p<0.01, ***p<0.001
Question: A12"Had you asked for antibiotics during that consultation?"

Table 5.1.6.2: Whether respondents had asked for antibiotics during the last medical consultation for cold or flu by year by year (%)

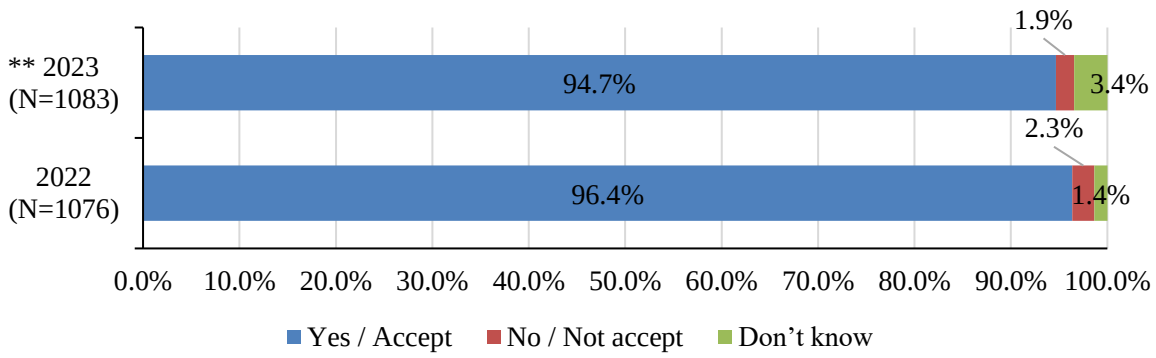
	Year	
	2022	2023
Yes	2.6	3.6
No	97.2	96.2
Can't remember	0.3	0.2
Sample size	(232)	(506)
p-value (Chi-Square)	0.761	

*p<0.05, **p<0.01, ***p<0.001
Question: A12 "Had you asked for antibiotics during that consultation?"

5.1.7 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 94.7% in 2023 (Figure 5.1.7a; Table 5.1.7a).

Figure 5.1.7a: 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.
*p<0.05, **p<0.01, ***p<0.001
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?"

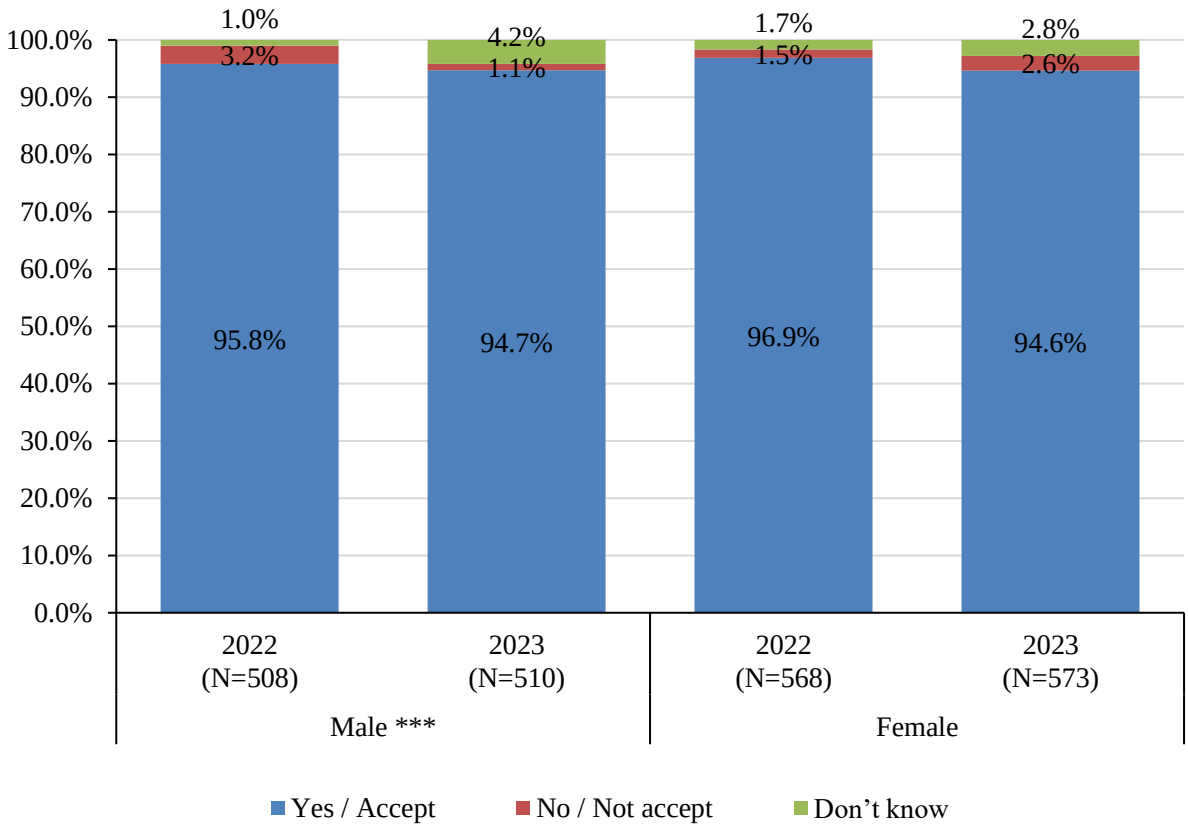
Table 5.1.7a: Whether respondents would accept the doctor's advice to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics or not by year (%)

	Year	
	2022	2023
Yes / Accept	96.4	94.7
No / Not accept	2.3	1.9
Don't know	1.4	3.4
Sample size	(1076)	(1083)
p-value (Chi-Square)	0.006**	

*p<0.05, **p<0.01, ***p<0.001
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?"

Compared to the 2022 survey by gender, the proportion of male respondents who would accept the doctor's advice decreased from 95.8% in 2022 to 94.7% in 2023. As for female respondents, no statistically significant difference was found between 2022 and 2023 (Figure 5.1.7b; Table 5.1.7b).

Figure 5.1.7b: 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 year (%)



Base(N): Persons aged 15 and over.
*p<0.05, **p<0.01, ***p<0.001
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?"

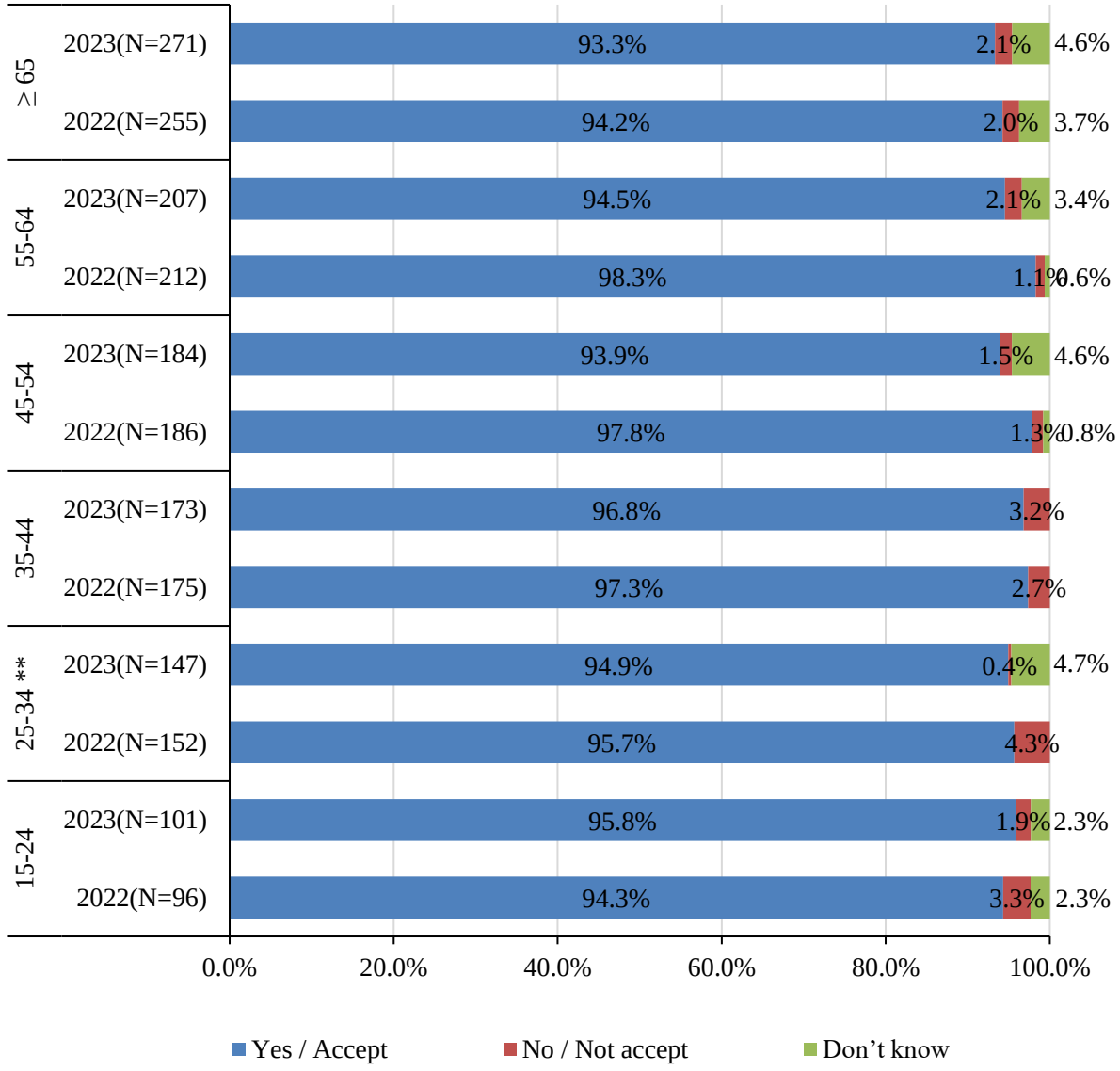
Table 5.1.7b: Whether respondents would accept the doctor's advice to observe for a few more days or to wait for the diagnostic test result before deciding whether to prescribe antibiotics or not by gender and year (%)

	Male		Female	
	2022	2023	2022	2023
Yes / Accept	95.8	94.7	96.9	94.6
No / Not accept	3.2	1.1	1.5	2.6
Don't know	1.0	4.2	1.7	2.8
Sample size	(508)	(510)	(568)	(573)
p-value (Chi-Square)	0.0007***		0.172	

*p<0.05, **p<0.01, ***p<0.001
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?"

Compared to the 2022 survey results, the proportion of those aged 25-34 accepting doctor's advice decreased from 95.7% in 2022 to 94.9% in 2023. No statistically significant difference between 2022 and 2023 was found in other age group (Figure 5.1.7c; Table 5.1.7c).

Figure 5.1.7c: 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 age and year (%)



Base(N): Persons aged 15 and over.
*p<0.05, **p<0.01, ***p<0.001
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?"

Table 5.1.7c: 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 age and year (%)

	15-24		25-34		35-44		45-54		55-64		≥ 65	
	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023
Yes / Accept	94.3	95.8	95.7	94.9	97.3	96.8	97.8	93.9	98.3	94.5	94.2	93.3
No / Not accept	3.3	1.9	4.3	0.4	2.7	3.2	1.3	1.5	1.1	2.1	2.0	2.1
Don't know	2.3	2.3	0.0	4.7	0.0	0.0	0.8	4.6	0.6	3.4	3.7	4.6
Sample size	(96)	(101)	(152)	(147)	(175)	(173)	(186)	(184)	(212)	(207)	(255)	(271)
p-value (Chi-Square)	0.816		0.002**		0.762		0.078		0.088		0.885	

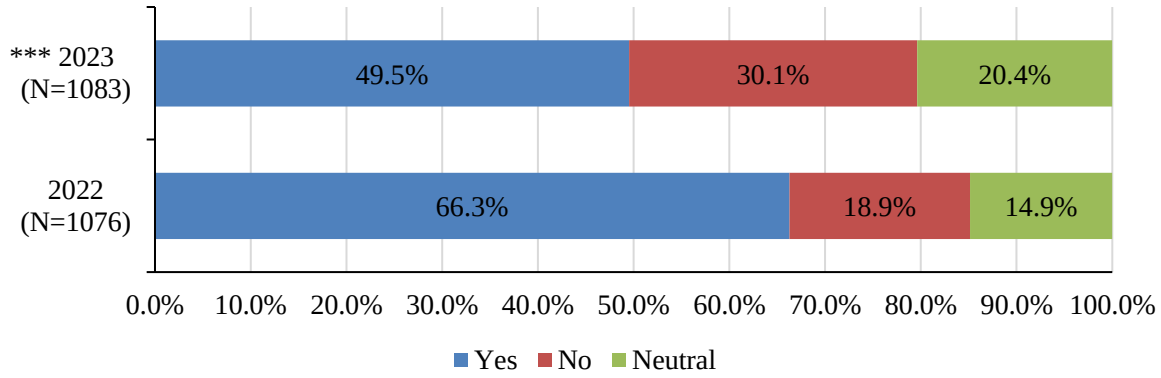
*p<0.05, **p<0.01, ***p<0.001

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?"

5.1.8 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 49.5% in 2023 (Figure 5.1.8a; Table 5.1.8a).

Figure 5.1.8a: Whether respondents wanted doctors to share decision making with them on antibiotics prescription by year (%)



Base(N): Persons aged 15 and over.
*p<0.05, **p<0.01, ***p<0.001
Question: A14 "Do you want your doctor to share decision making with you on antibiotics prescription?"

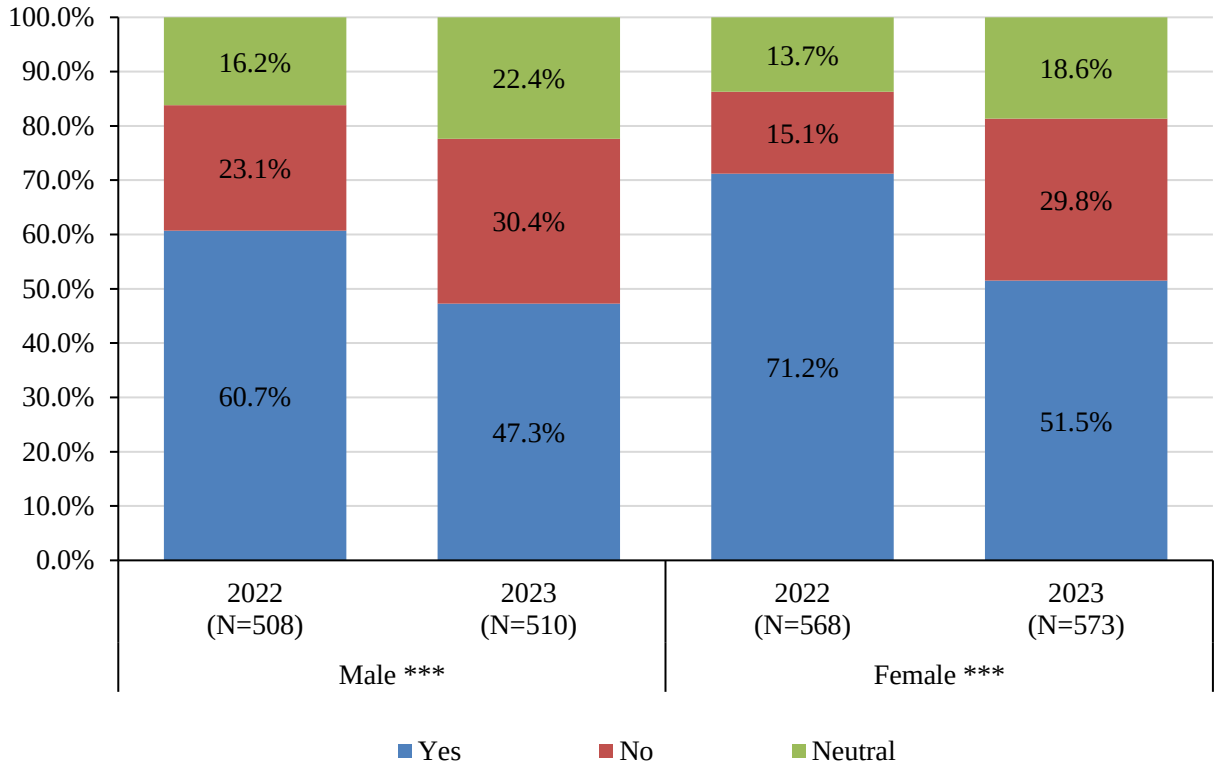
Table 5.1.8a: Whether respondents wanted doctors to share decision making with them on antibiotics prescription by year (%)

	Year	
	2022	2023
Yes	66.3	49.5
No	18.9	30.1
Neutral	14.9	20.4
Sample size	(1076)	(1083)
p-value (Chi-Square)	0.000***	

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

Statistically significant difference between 2022 and 2023 was found for both male and female. The proportion who wanted doctors to share decision making with them on antibiotics prescription for male and female decreased from 60.7% in 2022 to 47.3% in 2023; and 71.2% in 2022 to 51.5% in 2023 respectively (Figure 5.1.8b; Table 5.1.8b).

Figure 5.1.8b: Whether respondents wanted doctors to share decision making with them on antibiotics prescription by gender and year (%)



Base(N): Persons aged 15 and over.
*p<0.05, **p<0.01, ***p<0.001
Question: A14 “Do you want your doctor to share decision making with you on antibiotics prescription?”

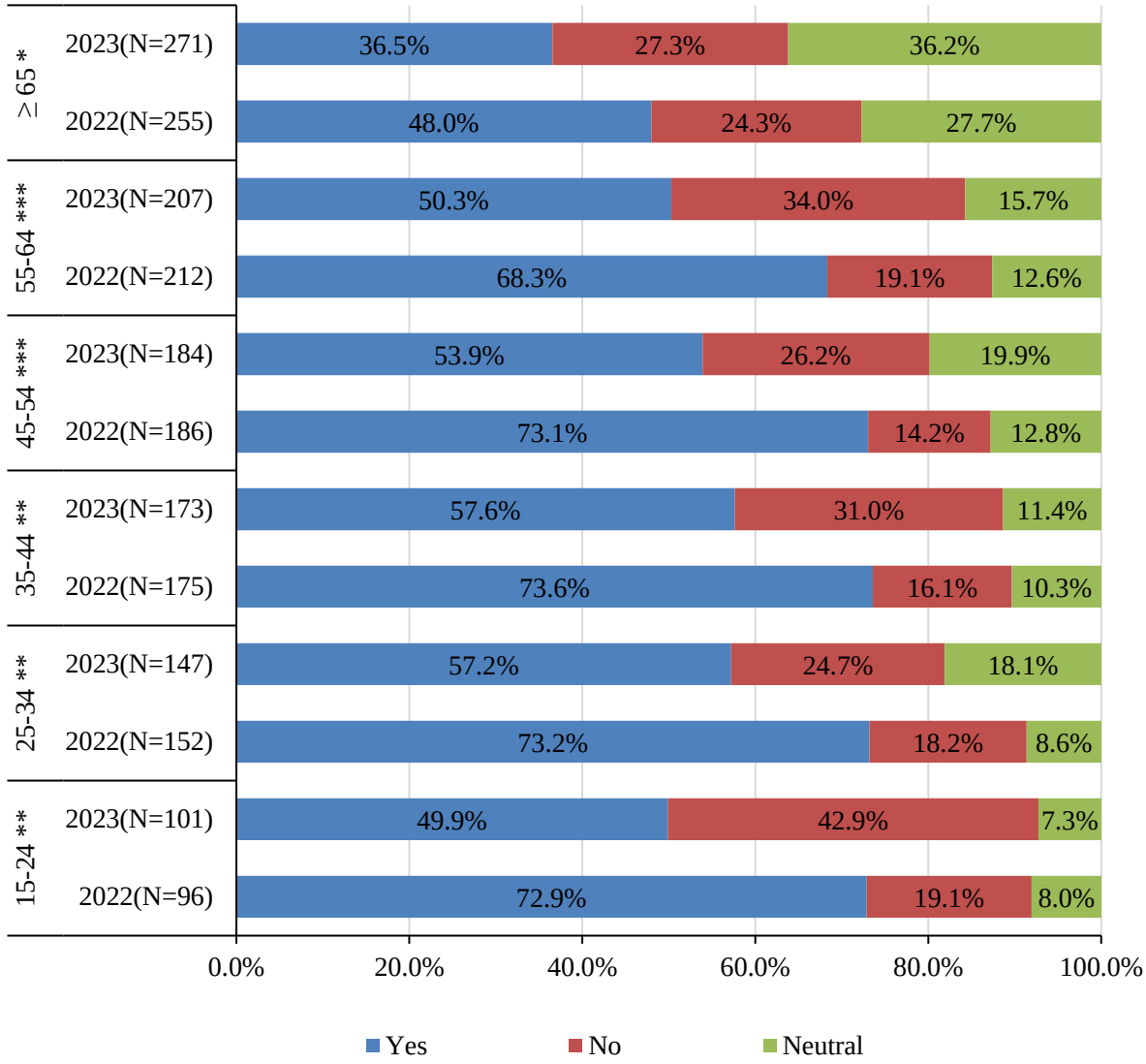
Table 5.1.8b: Whether respondents wanted doctors to share decision making with them on antibiotics prescription by gender and year (%)

	Male		Female	
	2022	2023	2022	2023
Yes	60.7	47.3	71.2	51.5
No	23.1	30.4	15.1	29.8
Neutral	16.2	22.4	13.7	18.6
Sample size	(508)	(510)	(568)	(573)
p-value (Chi-Square)	0.000***		0.000***	

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

Compared to the 2022 survey results, statistically significant difference between 2022 and 2023 was found across all age group of respondents in the answers to whether they wanted doctors to share decision making with them on antibiotics prescription. For those aged 15-24, 25-34, 35-44, 45-54, 55-64 and 65 or above, the proportion who wanted doctors to share decision making with them decreased from 72.9%, 73.2%, 73.6%, 73.1%, 68.3% and 48.0% in 2022 to 49.9%, 57.2%, 57.6%, 53.9%, 50.3% and 36.5% in 2023 respectively (Figure 5.1.8c; Table 5.1.8c).

Figure 5.1.8c: Whether respondents wanted doctors to share decision making with them on antibiotics prescription by age and year (%)



Base(N): Persons aged 15 and over.
*p<0.05, **p<0.01, ***p<0.001
Question: A14 “Do you want your doctor to share decision making with you on antibiotics prescription?”

Table 5.1.8c: Whether respondents wanted doctors to share decision making with them on antibiotics prescription by age and year (%)

	15-24		25-34		35-44		45-54		55-64		≥ 65	
	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023
Yes	72.9	49.9	73.2	57.2	73.6	57.6	73.1	53.9	68.3	50.3	48.0	36.5
No	19.1	42.9	18.2	24.7	16.1	31.0	14.2	26.2	19.1	34.0	24.3	27.3
Neutral	8.0	7.3	8.6	18.1	10.3	11.4	12.8	19.9	12.6	15.7	27.7	36.2
Sample size	(96)	(101)	(152)	(147)	(175)	(173)	(186)	(184)	(212)	(207)	(255)	(271)
p-value (Chi-Square)	0.001**		0.009**		0.003**		0.0006***		0.000***		0.024*	

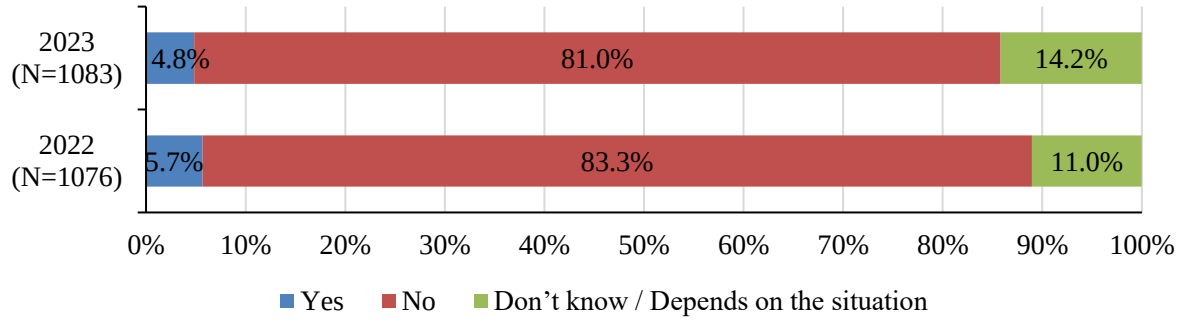
*p<0.05, **p<0.01, ***p<0.001

Question: A14 “Do you want your doctor to share decision making with you on antibiotics prescription?”

5.1.9 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 2023 (Figure 5.1.9; Table 5.1.9).

Figure 5.1.9: Whether respondents preferred consulting doctors who would prescribe antibiotics more readily by year (%)



Base(N): Persons aged 15 and over.
*p<0.05, **p<0.01, ***p<0.001
Question: A15 "Do you prefer consulting doctors who prescribe antibiotics more readily?"

Table 5.1.9: Whether respondents preferred consulting doctors who would prescribe antibiotics more readily by year (%)

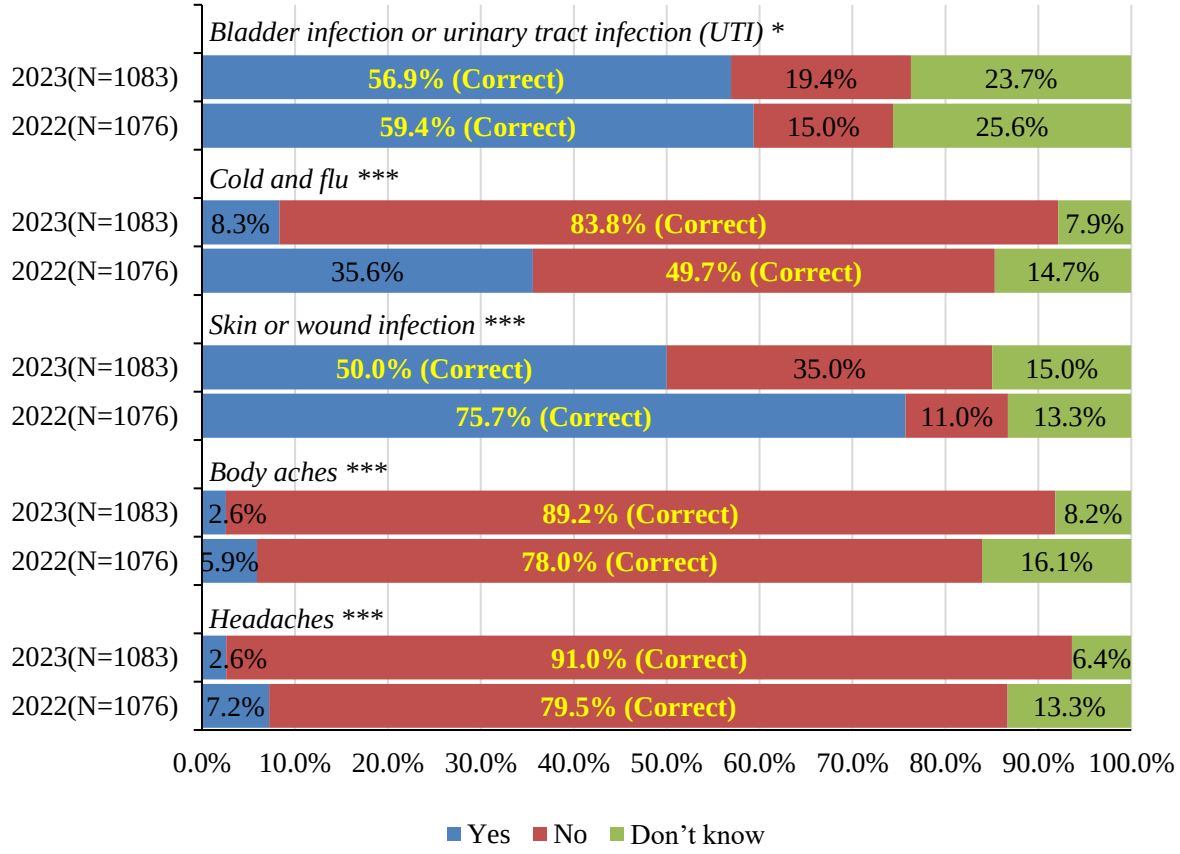
	Year	
	2022	2023
Yes	5.7	4.8
No	83.3	81.0
Don't know / Depends on the situation	11.0	14.2
Sample size	(1076)	(1083)
p-value (Chi-Square)	0.068	

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

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

As to whether 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 83.8%, 89.2% and 91.0% in 2023 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 56.9% and 50.0% in 2023 respectively (Figure 5.1.10; Table 5.1.10).

Figure 5.1.10: Whether respondents thought the selected health conditions need to use^ antibiotics by year (%)



*p<0.05, **p<0.01, ***p<0.001
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: A16a-e "Do you think these conditions need to use antibiotics?"
Note: ^ Caution should be taken when comparing the results, as some wordings in the question has been changed in 2023.

Table 5.1.10: Whether respondents thought the selected health conditions need to use^ antibiotics by year (%)

	Year	
	2022	2023
Bladder infection or urinary tract infection (UTI)		
Yes (Correct)	59.4	56.9
No	15.0	19.4
Don't know	25.6	23.7
Sample size	(1076)	(1083)
p-value (Chi-Square)	0.024*	
Cold and flu		
Yes	35.6	8.3
No (Correct)	49.7	83.8
Don't know	14.7	7.9
Sample size	(1076)	(1083)
p-value (Chi-Square)	0.000***	
Skin or wound infection		
Yes (Correct)	75.7	50.0
No	11.0	35.0
Don't know	13.3	15.0
Sample size	(1076)	(1083)
p-value (Chi-Square)	0.000***	
Body aches		
Yes	5.9	2.6
No (Correct)	78.0	89.2
Don't know	16.1	8.2
Sample size	(1076)	(1083)
p-value (Chi-Square)	0.000***	

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

(To be continued)

Table 5.1.10: Whether respondents thought the selected health conditions need to use^ antibiotics by year (%) (Continued)

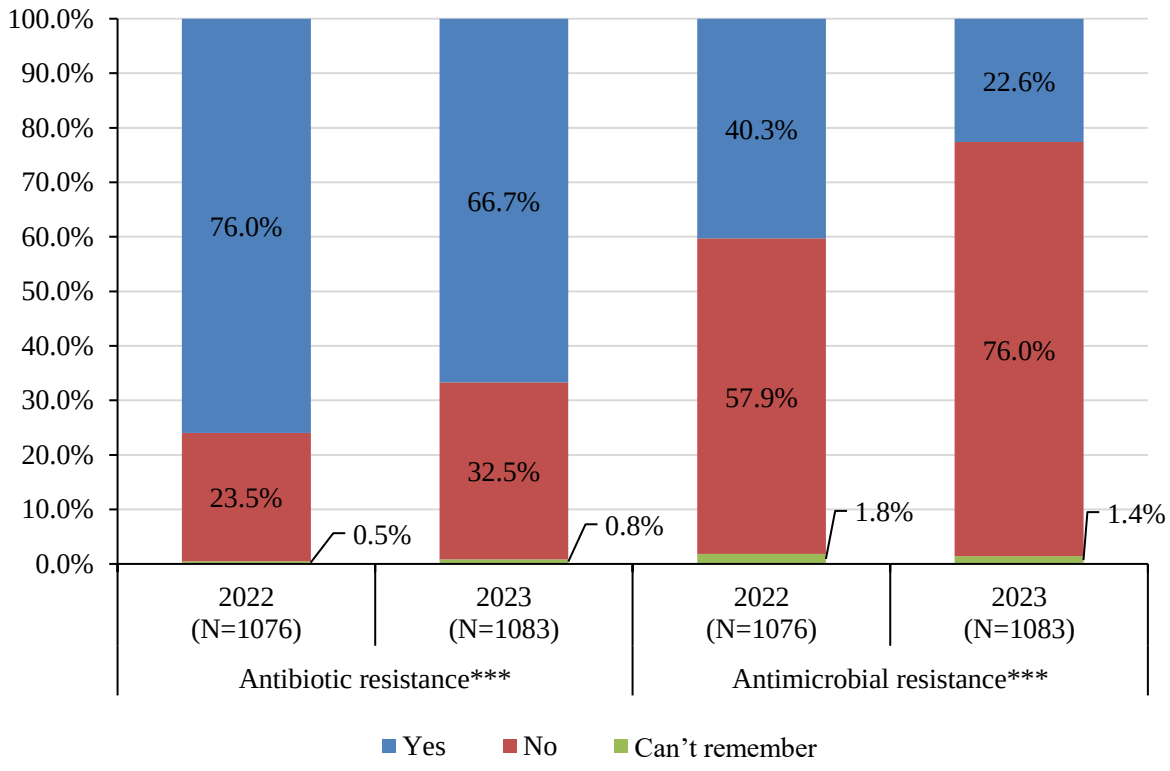
	Year	
	2022	2023
Headaches		
Yes	7.2	2.6
No (Correct)	79.5	91.0
Don't know	13.3	6.4
Sample size	(1076)	(1083)
p-value (Chi-Square)	0.000***	

*p<0.05, **p<0.01, ***p<0.001
Question in 2022: A13a-h "Do you think these conditions can be treated with antibiotics?"
Question in 2023: A16a-e "Do you think these conditions need to use antibiotics?"
Note: ^ Caution should be taken when comparing the results, as some wordings in the question has been changed in 2023.

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

The proportion of having heard of "Antibiotic resistance" and "Antimicrobial resistance" for all respondents decreased from 76.0% in 2022 to 66.7% in 2023; and from 40.3% in 2022 to 22.6% in 2023 respectively (Figure 5.1.11a; Table 5.1.11a).

Figure 5.1.11a: Whether respondents had heard of the selected terms related to antimicrobial resistance by year (%)



Base(N): Persons aged 15 and over.
*p<0.05, **p<0.01, ***p<0.001
Question: A17a-c "Have you heard of any of the following terms?"

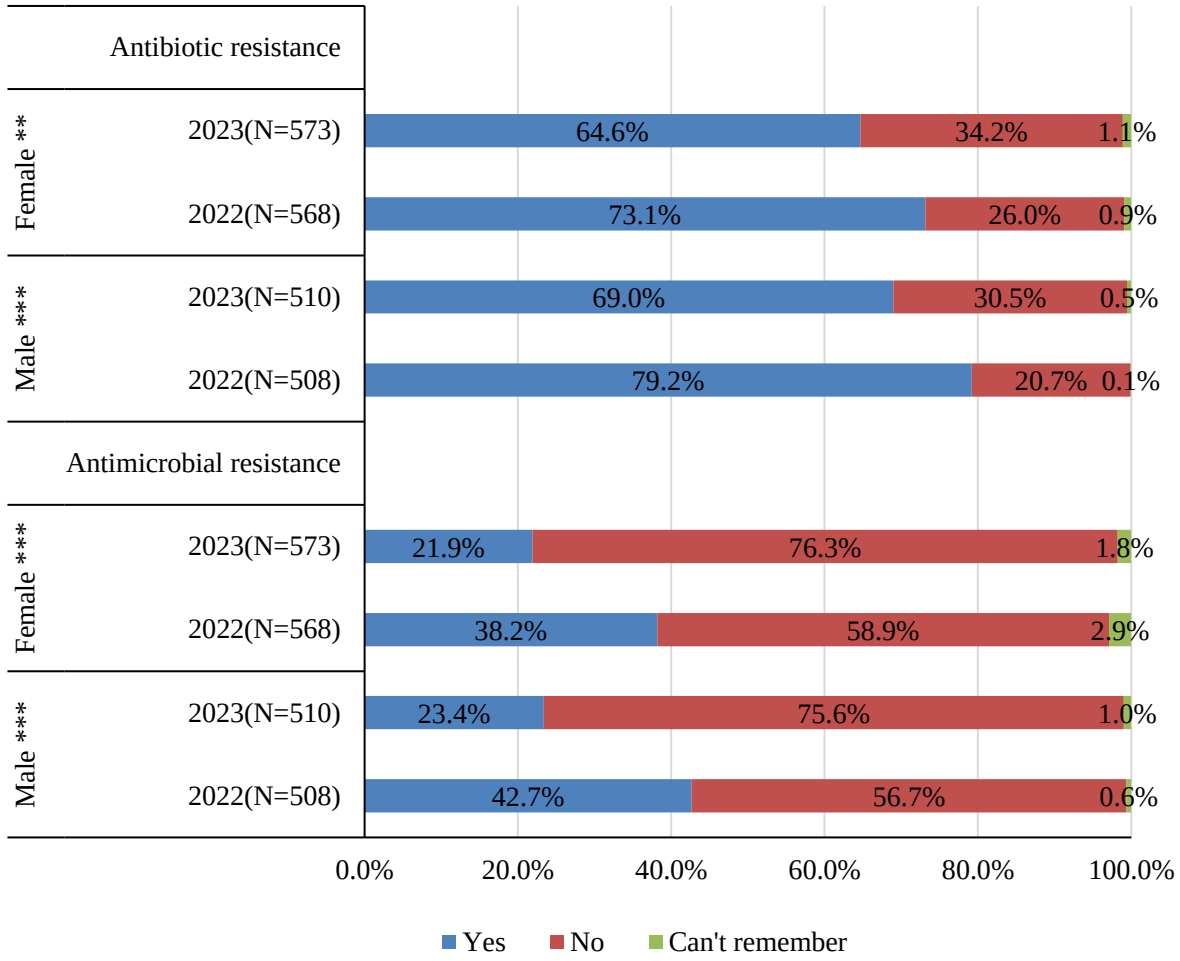
Table 5.1.11a: Whether respondents had heard of the selected terms related to antimicrobial resistance by year (%)

	Year	
	2022	2023
Antibiotic resistance		
Yes	76.0	66.7
No	23.5	32.5
Can't remember	0.5	0.8
Sample size	(1076)	(1083)
p-value (Chi-Square)	0.000***	
Antimicrobial resistance		
Yes	40.3	22.6
No	57.9	76.0
Can't remember	1.8	1.4
Sample size	(1076)	(1083)
p-value (Chi-Square)	0.000***	

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

Compared to the 2022 survey by gender, the proportion of male respondents who had heard of "Antibiotic resistance" and "Antimicrobial resistance" decreased from 79.2% in 2022 to 69.0% in 2023, and from 42.7% in 2022 to 23.4% in 2023 respectively; while those of female respondents decreased from 73.1% in 2022 to 64.6% in 2023, and from 38.2% in 2022 to 21.9% in 2023 respectively (Figure 5.1.11b; Table 5.1.11b).

Figure 5.1.11b: Whether respondents had heard of the selected terms related to antimicrobial resistance by gender and year (%)



Base: Persons aged 15 and over.
*p<0.05, **p<0.01, ***p<0.001
Question: A17a-c "Have you heard of any of the following terms?"

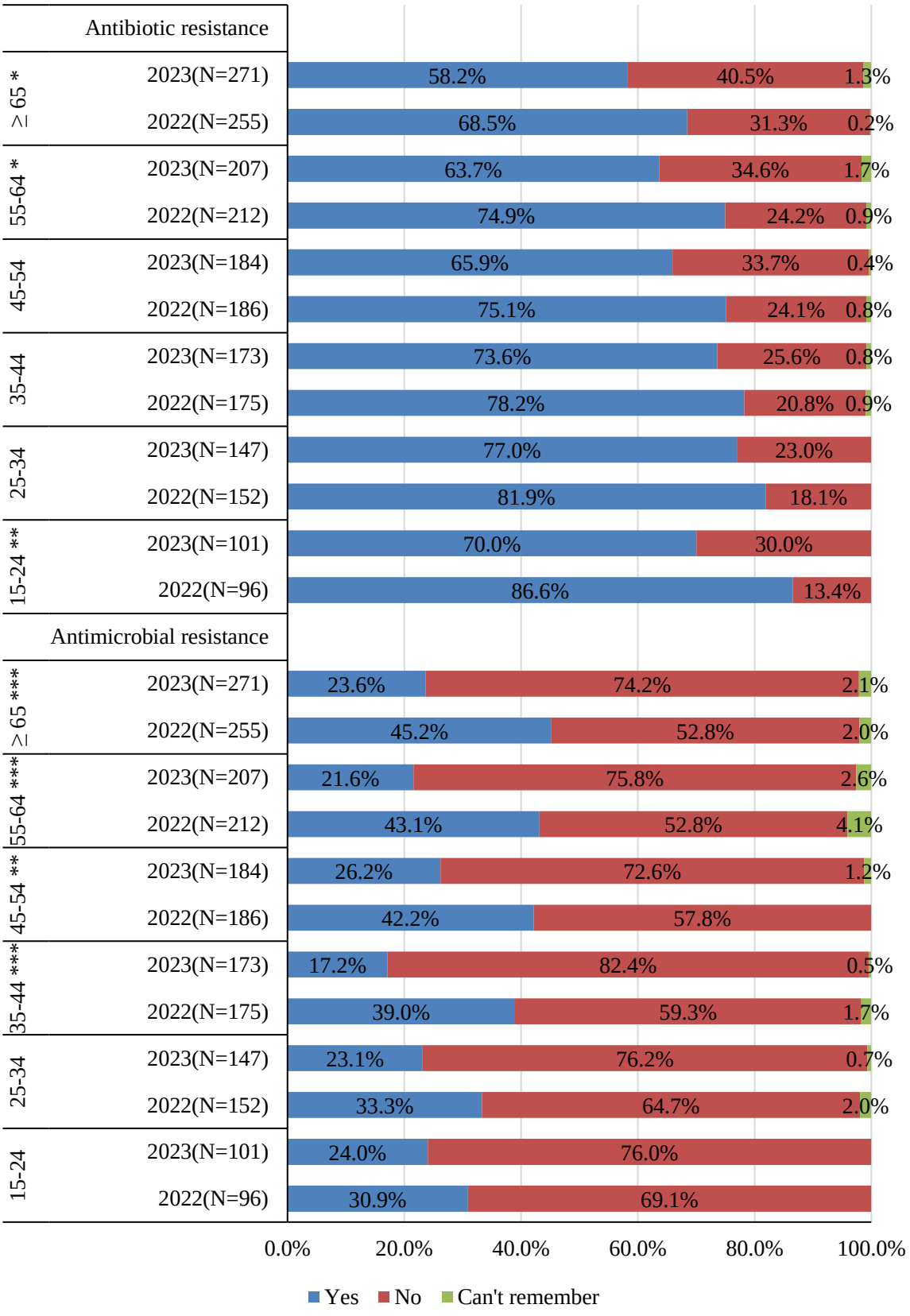
Table 5.1.11b: Whether respondents had heard of the selected terms related to antimicrobial resistance by gender and year (%)

	Male		Female	
	2022	2023	2022	2023
Antibiotic resistance				
Yes	79.2	69.0	73.1	64.6
No	20.7	30.5	26.0	34.2
Can't remember	0.1	0.5	0.9	1.1
Sample size	(508)	(510)	(568)	(573)
p-value (Chi-Square)	0.0006***		0.008**	
Antimicrobial resistance				
Yes	42.7	23.4	38.2	21.9
No	56.7	75.6	58.9	76.3
Can't remember	0.6	1.0	2.9	1.8
Sample size	(508)	(510)	(568)	(573)
p-value (Chi-Square)	0.000***		0.000***	

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

Compared to the 2022 survey results, for those aged 15-24, 55-64 and 65 or above, the proportion of respondents who had heard of "Antibiotic resistance" decreased from 86.6%, 74.9% and 68.5% in 2022 to 70.0%, 63.7% and 58.2% in 2023 respectively. Besides, for those aged 35-44, 45-54, 55-64 and 65 or above, the proportion of respondents who had heard of "Antimicrobial resistance" decreased from 39.0%, 42.2%, 43.1% and 45.2% in 2022 to 17.2%, 26.2%, 21.6% and 23.6% in 2023 respectively (Figure 5.1.11c; Table 5.1.11c).

Figure 5.1.11c: Whether respondents had heard of the selected terms related to antimicrobial resistance by age and year (%)



Base: Persons aged 15 and over.
*p<0.05, **p<0.01, ***p<0.001
Question: A17a-c "Have you heard of any of the following terms?"

Table 5.1.11c: Whether respondents had heard of the selected terms related to antimicrobial resistance by age and year (%)

	15-24		25-34		35-44		45-54		55-64		≥ 65	
	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023
Antibiotic resistance												
Yes	86.6	70.0	81.9	77.0	78.2	73.6	75.1	65.9	74.9	63.7	68.5	58.2
No	13.4	30.0	18.1	23.0	20.8	25.6	24.1	33.7	24.2	34.6	31.3	40.5
Can't remember	0.0	0.0	0.0	0.0	0.9	0.8	0.8	0.4	0.9	1.7	0.2	1.3
Sample size	(96)	(101)	(152)	(147)	(175)	(173)	(186)	(184)	(212)	(207)	(255)	(271)
p-value (Chi-Square)	0.005**		0.292		0.576		0.113		0.042*		0.025*	
Antimicrobial resistance												
Yes	30.9	24.0	33.3	23.1	39.0	17.2	42.2	26.2	43.1	21.6	45.2	23.6
No	69.1	76.0	64.7	76.2	59.3	82.4	57.8	72.6	52.8	75.8	52.8	74.2
Can't remember	0.0	0.0	2.0	0.7	1.7	0.5	0.0	1.2	4.1	2.6	2.0	2.1
Sample size	(96)	(101)	(152)	(147)	(175)	(173)	(186)	(184)	(212)	(207)	(255)	(271)
p-value (Chi-Square)	0.278		0.080		0.000***		0.002**		0.000***		0.000***	

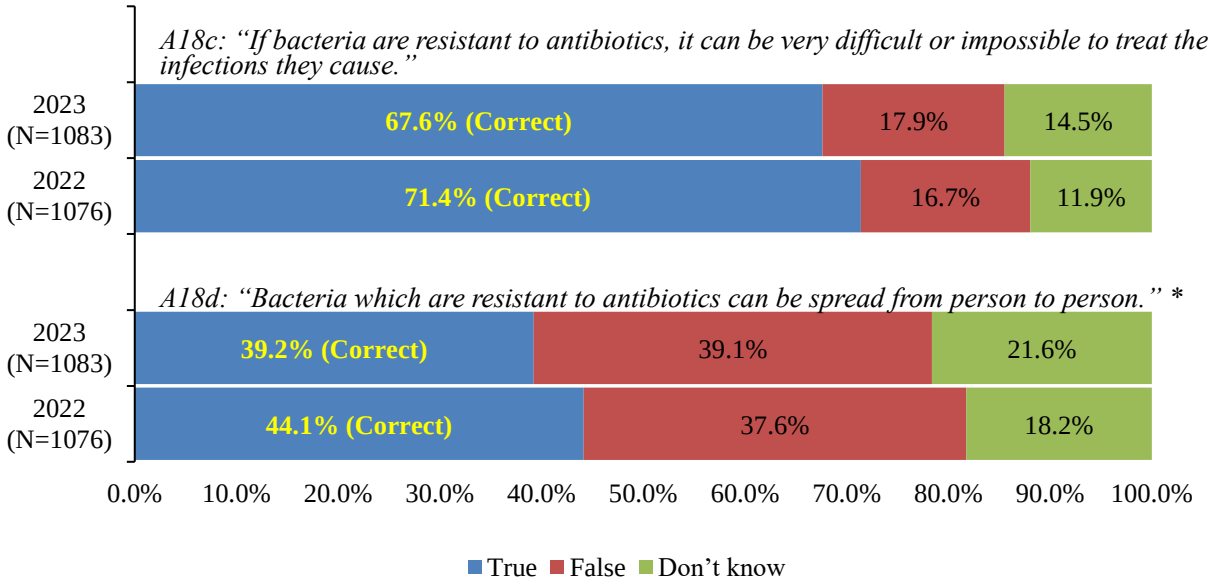
*p<0.05, **p<0.01, ***p<0.001

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

5.1.12 Statements about antibiotic resistance

The proportion of giving correct answer to the statement "Bacteria which are resistant to antibiotics can be spread from person to person" for all respondents decreased from 44.1% in 2022 to 39.2% in 2023. There was no statistically significant difference between 2022 and 2023 in the response to the statement "If bacteria are resistant to antibiotics, it can be very difficult or impossible to treat the infections they cause" (Figure 5.1.12a; Table 5.1.12a).

Figure 5.1.12a: Whether respondents thought the selected statements about antibiotic resistance as true or false by year (%)



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

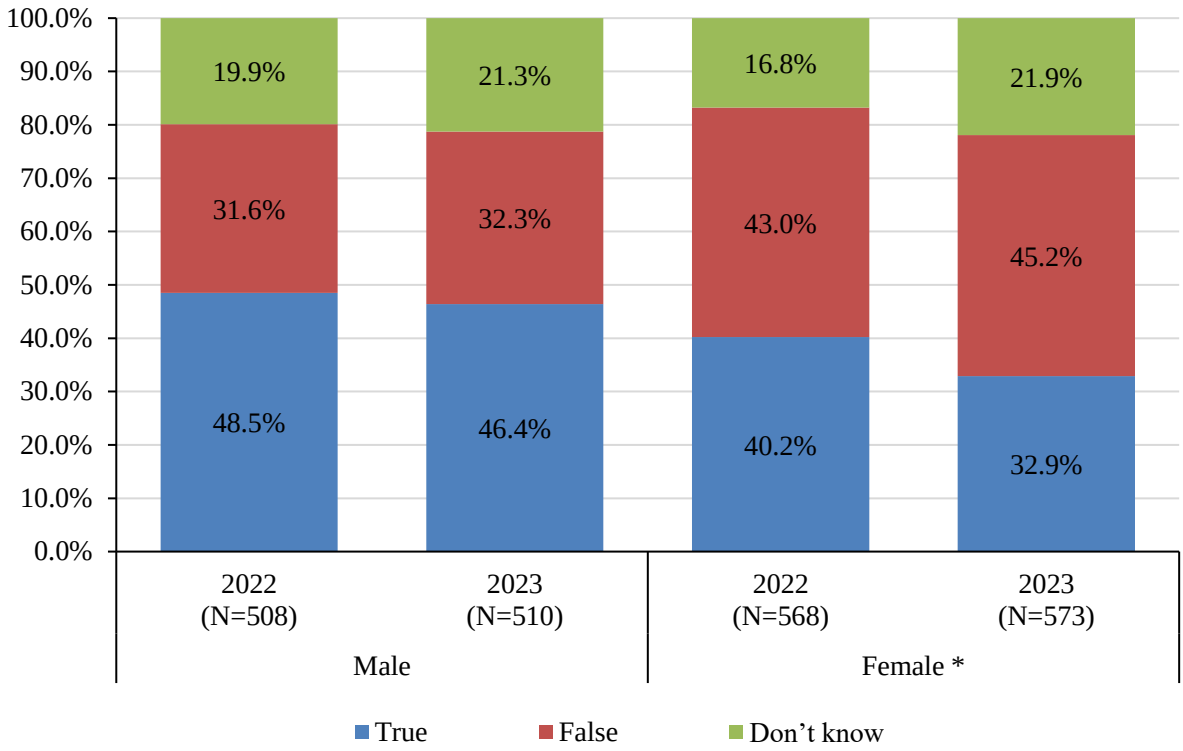
Table 5.1.12a: Whether respondents thought the selected statements about antibiotic resistance as true or false by year (%)

	Year	
	2022	2023
If bacteria are resistant to antibiotics, it can be very difficult or impossible to treat the infections they cause		
True (Correct)	71.4	67.6
False	16.7	17.9
Don't know	11.9	14.5
Sample size	(1076)	(1083)
p-value (Chi-Square)	0.123	
Bacteria which are resistant to antibiotics can be spread from person to person		
True (Correct)	44.1	39.2
False	37.6	39.1
Don't know	18.2	21.6
Sample size	(1076)	(1083)
p-value (Chi-Square)	0.039*	

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

Compared to the 2022 survey results, the proportion of female giving correct answer to the statement "Bacteria which are resistant to antibiotics can be spread from person to person" decreased from 40.2% in 2022 to 32.9% in 2023. There was no statistically significant difference between 2022 and 2023 for male respondents (Figure 5.1.12b; Table 5.1.12b).

Figure 5.1.12b: Whether respondents thought the statement about bacteria which are resistant to antibiotics can be spread from person to person as true or false by gender and year (%)



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

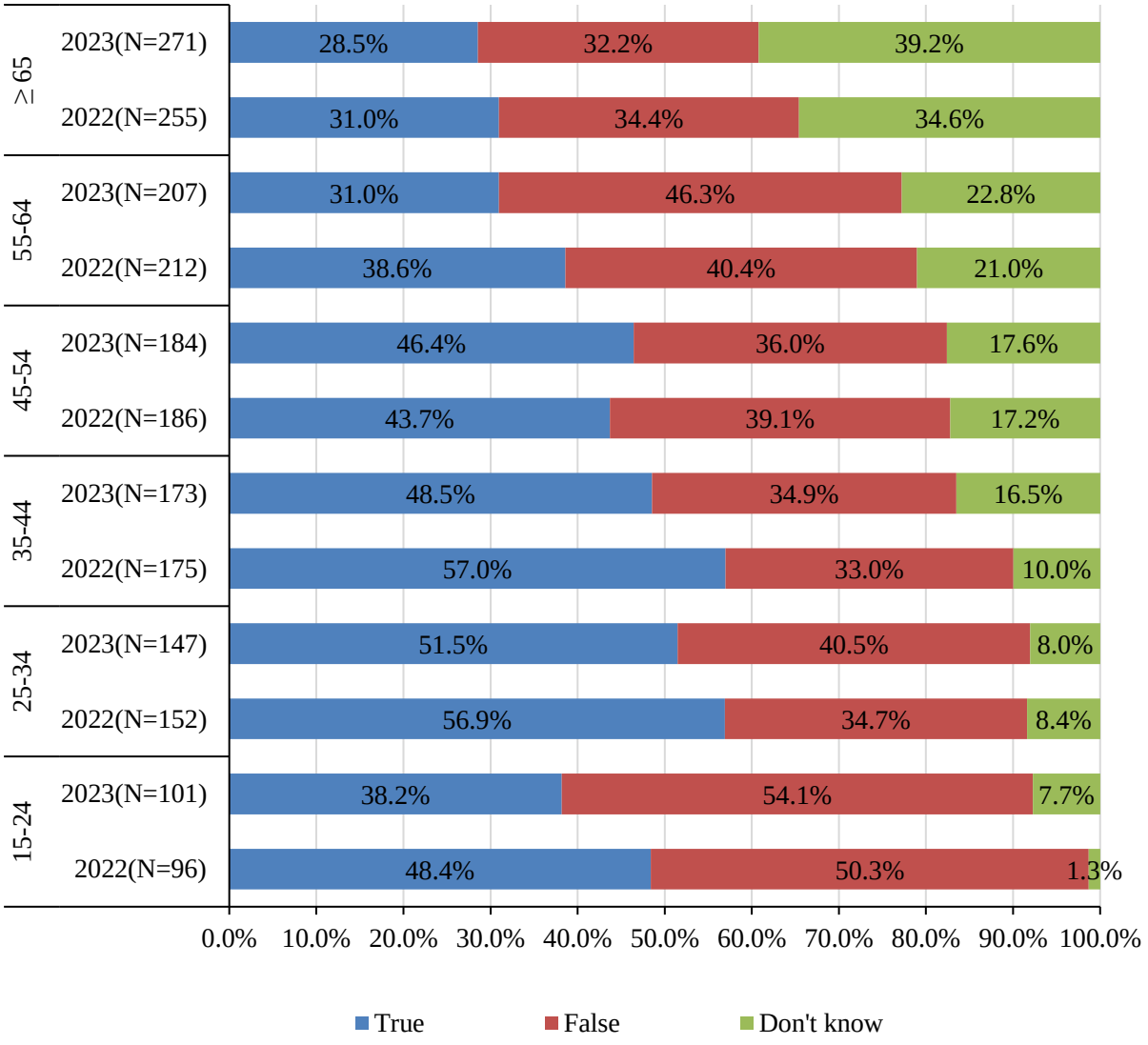
Table 5.1.12b: Whether respondents thought the statement about bacteria which are resistant to antibiotics can be spread from person to person as true or false by gender and year (%)

	Male		Female	
	2022	2023	2022	2023
Bacteria which are resistant to antibiotics can be spread from person to person				
True (Correct)	48.5	46.4	40.2	32.9
False	31.6	32.3	43.0	45.2
Don't know	19.9	21.3	16.8	21.9
Sample size	(508)	(510)	(568)	(573)
p-value (Chi-Square)	0.776		0.015*	

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

Compared to the 2022 survey results, there was no statistically significant difference between 2022 and 2023 among all age group in whether they regarded the statement "Bacteria which are resistant to antibiotics can be spread from person to person" as true or false (Figure 5.1.12c; Table 5.1.12c).

Figure 5.1.12c: Whether respondents thought the statement about bacteria which are resistant to antibiotics can be spread from person to person as true or false by age and year (%)



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

Table 5.1.12c: Whether respondents thought the statement about bacteria which are resistant to antibiotics can be spread from person to person as true or false by age and year (%)

	15-24		25-34		35-44		45-54		55-64		≥ 65	
	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023
Bacteria which are resistant to antibiotics can be spread from person to person												
True (Correct)	48.4	38.2	56.9	51.5	57.0	48.5	43.7	46.4	38.6	31.0	31.0	28.5
False	50.3	54.1	34.7	40.5	33.0	34.9	39.1	36.0	40.4	46.3	34.4	32.2
Don't know	1.3	7.7	8.4	8.0	10.0	16.5	17.2	17.6	21.0	22.8	34.6	39.2
Sample size	(96)	(101)	(152)	(147)	(175)	(173)	(186)	(184)	(212)	(207)	(255)	(271)
p-value (Chi-Square)	0.057		0.580		0.130		0.822		0.255		0.543	

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

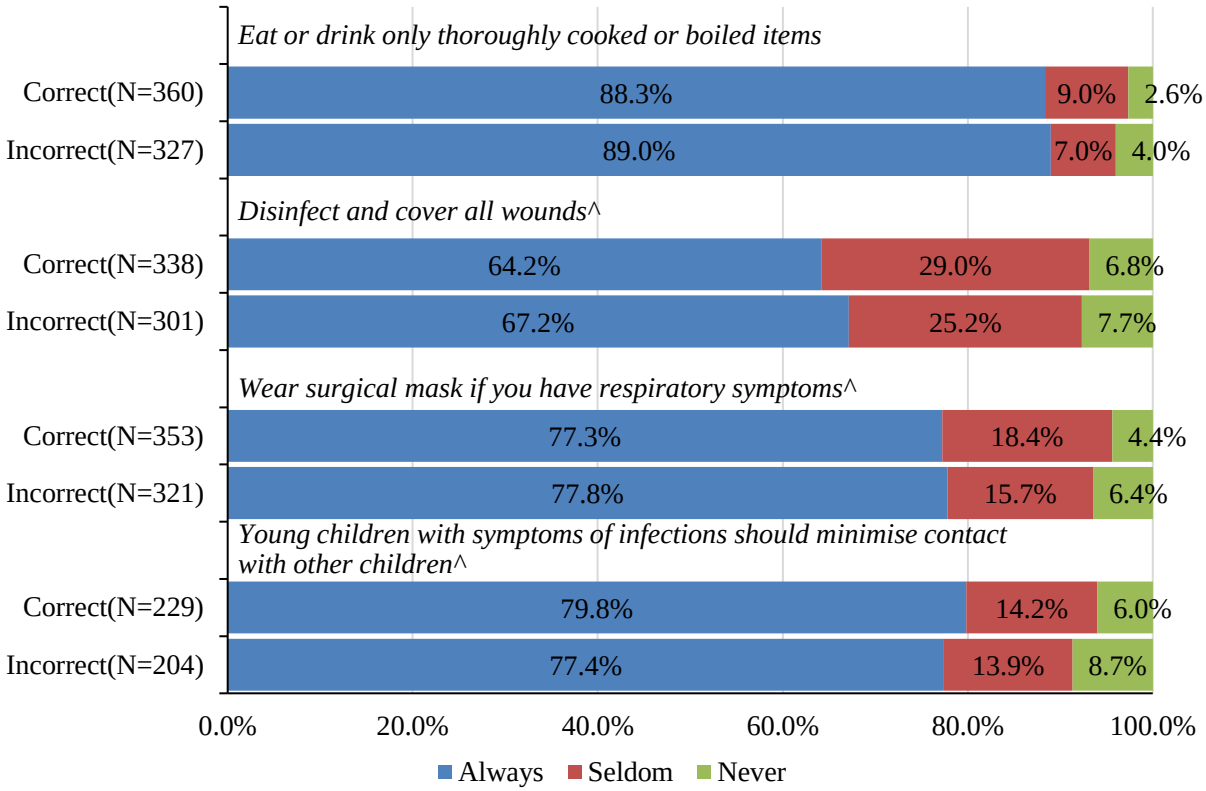
Question: A18a-j "Please indicate whether you think the following statements are 'true' or 'false'."

5.2 Further Analysis of Selected Questions in the 2023 Survey

5.2.1 Frequency of practising the health advice on antibiotics medicine bags by whether correctly identified the selected statement about antibiotic resistance

Cross tabulation analysis was used to examine the relationship between practising the health advice on antibiotics medicine bags and the knowledge of the selected statement about antibiotic resistance. There was no statistically significant difference in the frequency of practising all four of the selected health advice between those who gave correct answer to the statement about resistant bacteria can spread from person to person and those who did not. It suggests that there was no statistically significant correlation between the frequency of practising the health advice on antibiotics medicine bags and the knowledge about the spread of resistant bacteria from person to person (Figure 5.2.1; Table 5.2.1).

Figure 5.2.1: Frequency of practising the health advice on antibiotics medicine bags by whether correctly identified the statement about resistant bacteria can spread from person to person (%)



Base(N): Persons aged 15 and over whose last taken antibiotics were prescribed by doctors.
*p<0.05, **p<0.01, ***p<0.001
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?"; A18a-j "Please indicate whether you think the following statements are 'true' or 'false'."
Note: ^Those with no young children at home/no respiratory symptoms/no wounds were excluded.

Table 5.2.1: Frequency of practising the health advice on antibiotics medicine bags by whether correctly identified the statement about resistant bacteria can spread from person to person (%)

	Whether correctly identified the statement	
	Correct (True)	Incorrect (False)
Eat or drink only thoroughly cooked or boiled items		
Always	88.3	89.0
Seldom	9.0	7.0
Never	2.6	4.0
Sample size	(360)	(327)
p-value (Chi-Square)	0.407	
*Disinfect and cover all wounds^*		
Always	64.2	67.2
Seldom	29.0	25.2
Never	6.8	7.7
Sample size	(338)	(301)
p-value (Chi-Square)	0.540	

*p<0.05, **p<0.01, ***p<0.001
Note: ^Those with no young children at home/no respiratory symptoms/no wounds were excluded.
(To be continued)

Table 5.2.1: Frequency of practising the health advice on antibiotics medicine bags by whether correctly identified the statement about resistant bacteria can spread from person to person (%) (Continued)

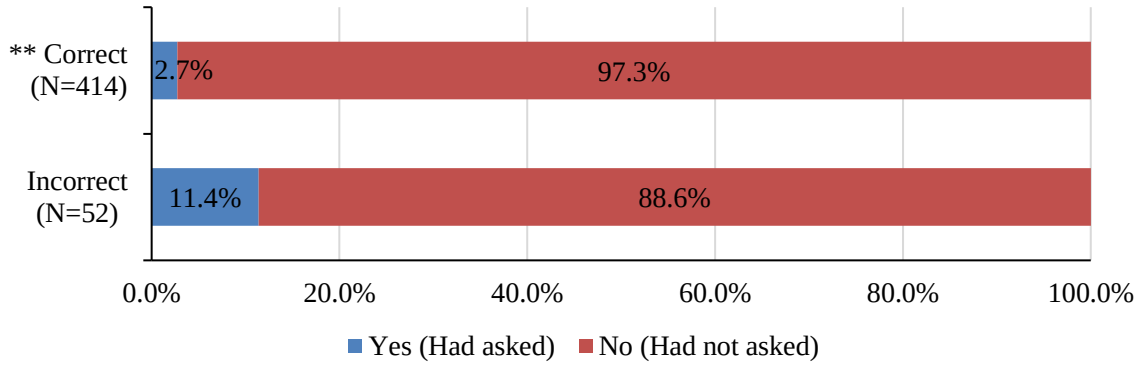
	Whether correctly identified the statement	
	Correct (True)	Incorrect (False)
*Wear surgical mask if you have respiratory symptoms^*		
Always	77.3	77.8
Seldom	18.4	15.7
Never	4.4	6.4
Sample size	(353)	(321)
p-value (Chi-Square)	0.371	
*Young children with symptoms of infections should minimise contact with other children^*		
Always	79.8	77.4
Seldom	14.2	13.9
Never	6.0	8.7
Sample size	(229)	(204)
p-value (Chi-Square)	0.559	

*p<0.05, **p<0.01, ***p<0.001
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?"; A18a-j "Please indicate whether you think the following statements are 'true' or 'false'."
Note: ^Those with no young children at home/no respiratory symptoms/no wounds were excluded.

5.2.2 Whether respondents had asked for antibiotics during the last medical consultation by whether correctly identified that antibiotics are not needed for cold and fluError! Bookmark not defined.

Cross tabulation analysis showed that respondents who correctly identified that antibiotics are not needed for cold and flu were less likely to ask for antibiotics during the last medical consultation than those who did not give the correct answer. The proportion of asked for antibiotics during the last medical consultation for those who correctly identified that antibiotics are not needed for cold and flu was 2.7%, lower than that of those who did not give the correct answer (11.4%) (Figure 5.2.2; Table 5.2.2).

Figure 5.2.2: Whether respondents had asked for antibiotics during the last medical consultation by whether correctly identified that antibiotics are not needed for cold and flu (%)



Base(N): Persons aged 15 and over who had consulted a doctor for cold or flu in the past 12 months (A12); Persons aged 15 and over (A16a-e).
*p<0.05, **p<0.01, ***p<0.001
Question: A12“Had you asked for antibiotics during that consultation?”; A16a-e “Do you think these conditions need to use antibiotics?”

Table 5.2.2: Whether respondents had asked for antibiotics during the last medical consultation by whether correctly identified that antibiotics are not needed for cold and flu (%)

	Whether correctly identified that antibiotics are not needed for cold and flu	
	Incorrect (Needed)	Correct (Not needed)
Yes (Had asked)	11.4	2.7
No (Had not asked)	88.6	97.3
Sample size	(52)	(414)
p-value (Chi-Square)	0.002**	

*p<0.05, **p<0.01, ***p<0.001
Question: A12“Had you asked for antibiotics during that consultation?”; A16a-e “Do you think these conditions need to use antibiotics?”

6. Conclusion and Recommendations

6.1 Conclusion

6.1.1 Use of antibiotics

Over one-third (36.6%) of all respondents last took antibiotics within the past year. It showed a statistically significant increase from 26.1% in 2022. The majority (97.1%) of those who had ever taken antibiotics reported that their last taken antibiotics were prescribed by doctors, and 62.2% of this subgroup obtained their antibiotics last taken from private clinics. The major source of antibiotics last taken that were not or could not remember if prescribed by doctors was from medical store or pharmacy (58.9%).

Nearly half (46.7%) of all respondents had consulted doctor(s) for cold or flu in the past 12 months before enumeration. There was a statistically significant increase from 21.6% in 2022. It may be because this survey was conducted after the COVID-19 pandemic when normalcy and social activities resumed. Surveillance revealed an increase in antimicrobial use after COVID-19, likely due to the rebound of respiratory infections as reflected in the increase in the percentage of respondents having consulted doctors for cold/flu (from 21.6% in 2022 to 46.7% in 2023), which results in both appropriate use of antibiotics to treat bacterial infections and inappropriate use for viral diseases.

The majority (96.2%) of those who had consulted doctor(s) for cold or flu in the past 12 months did not request antibiotics during that consultation. The majority (91.9%) of respondents whose antibiotics last taken were prescribed by doctors completed the whole course of treatment as instructed by doctor. The main reason for more than half of (59.3%) those who did not complete the whole course of treatment was improvement of symptoms.

6.1.2 Awareness of the health advice printed on antibiotics medicine bag

About a fifth (19.7%) of respondents whose antibiotics last taken were prescribed by doctors reported that they had noticed the health advice on antibiotics medicine bags. Among them, 80.0% considered the advice helpful to remind them maintaining personal hygiene.

Among respondents whose antibiotics last taken were prescribed by doctors, the proportion of always 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 (89.6%);
b. Young children with symptoms of infections should minimise contact with other children (79.4%);
c. Wear surgical mask if you have respiratory symptoms (77.3%);
d. Disinfect and cover all wounds (64.4%), and;
e. Practise frequent hand hygiene (62.8%).

A statistically significant difference from 2022 was observed in the frequency of wearing surgical mask when they have respiratory symptoms. The percentage of always wearing surgical mask increased from 72.3% in 2022 to 77.3% in 2023. No statistically significant difference from 2022 was observed in the frequency of practising other health advice.

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

Around three-fourths (73.8%) of all respondents reported that they had not noticed the

notices about “Do not purchase antibiotics without a prescription” posted at community pharmacies, while 7.0% noticed the notice and considered it helpful, and 2.1% noticed the notice but considered it not helpful in reminding them not to purchase antibiotics without doctor’s prescription.

6.1.4 Knowledge, awareness and attitude

The majority (94.7%) 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 when doctor’s initial assessment indicated that antibiotic was not needed at the moment. The majority (81.0%) 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 49.5% in 2023.

The percentages of respondents who could correctly identify which health conditions needed to use antibiotics are listed below:[3]

a. Headaches (No: 91.0%);
b. Body aches (No: 89.2%);
c. Cold and flu (No: 83.8%);
d. Bladder infection or urinary tract infection (UTI) (Yes: 56.9%); and
e. Skin or wound infection (Yes: 50.0%).

- The percentages of correct answers to cold and flu, body aches and headaches

[3] The 2023 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.

increased to 83.8%, 89.2% and 91.0% in 2023 from 49.7%, 78.0% and 79.5% in 2022, 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 56.9% and 50.0% in 2023.

The majority of all respondents had heard of the following terms (in the language used during enumeration, i.e. Chinese or English), including “Antibiotic resistance” (抗生素耐藥性) (66.7%) and “Drug-resistant bacteria” (耐藥性細菌) (66.6%). Only 22.6% had heard of “Antimicrobial resistance” (抗菌素耐藥性). The proportion of having heard of “Antibiotic resistance” and “Antimicrobial resistance” decreased from 76.0% and 40.3% respectively in 2022.

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: 91.4%);
b. Using separate utensils to handle cooked or ready-to-eat foods and raw foods can prevent cross-contamination of drug resistant bacteria (True: 87.6%);
c. Some infections are becoming increasingly resistant to treatment by antibiotics (True: 79.6%);

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 (True: 73.7%);

b. Thorough cooking is effective to kill drug-resistant bacteria in food. (True: 71.4%);

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 (True: 71.2%);

d. Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria (True: 71.1%);

- Respondents aged 65 or above had the lowest percentages of giving correct answers to 8 out of 10 of the statements about antibiotic resistance. Male respondents were more likely to correctly identify the statement "Eating raw or undercooked food increase your risk of exposure or infection from harmful microorganisms including drug-resistant bacteria" and "Bacteria which are resistant to antibiotics can be spread from person to person" as true.
- The proportion of giving correct answers to the statement "Bacteria which are resistant to antibiotics can be spread from person to person" decreased from 44.1% in 2022 to 39.2% in 2023.

6.1.5 Relationship between knowledge and behaviour

It was found in the 2023 survey that respondents who correctly identified that antibiotics are not needed for cold and flu had a lower percentage of asking for antibiotics during the last medical consultation (2.7%) than those who did not give correct answer (11.4%).

6.2 Recommendations

1. Less than two-thirds of the respondents correctly answered that bladder infection or urinary tract infection (UTI), and skin or wound infection need to use antibiotics. More focused health education on which kinds of common health conditions need to use antibiotics should be provided to the public.

2. Only less than two-fifths of the respondents knew that bacteria resistant to antibiotics could be spread from person to person. Public education on knowledge and related infection control practices should be reinforced.

3. Around three-fourths of all the respondents reported that they had not noticed the notices about "Do not purchase antibiotics without a prescription" posted at community pharmacies. In addition, only about a fifth of the respondents whose last taken antibiotics were prescribed by doctors noticed the health advice on antibiotics medicine bags. More health promotion, better design, in addition to explanation on the health advice by pharmacists / doctors while dispensing antibiotics to patients could be considered.

4. The survey revealed that the oldest age group of 65 or above generally had the lowest level of knowledge about AMR and the use of antibiotics among all age group. Tailor made health education and promotion that could be easily accessed and understood by the elders should be enhanced.

5. There were drops in the percentage of respondents having heard of the terms Antibiotic Resistance (抗生素耐藥性) (from 76.0% to 66.7%), and Antimicrobial Resistance (抗菌素耐藥性) (from 40.3% to 22.6%). In light of the knowledge deficit among the public, more intensive health education and promotion activities should be conducted to raise the public's knowledge and awareness of antimicrobial resistance through easy-to-understand

and impactful media channels.

6. This survey also revealed that a lower proportion of respondents wanted their doctors to share decision making with them on antibiotics prescription (66.3% in 2022 and 49.5% in 2023) 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 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 survey was conducted during cold and flu season in the period of November 2023 to January 2024 which may affect the health seeking behaviour of people. Comparison of the result of the present survey 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 bags 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.

(END)

Appendix I: Content of Questionnaire

公眾對抗生素耐藥性認知、態度及行為調查 2023

General Public's Knowledge, Attitude and Practice Survey on Antibiotic Resistance 2023

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 group 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【問卷結束】

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開架呢？」

"On that occasion, were the antibiotics prescribed by doctors?"

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 doctors or who could not remember whether they were prescribed by doctors（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 were prescribed by doctors (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 were prescribed by doctors (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衞生嘅指示呢？」

"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 were prescribed by doctors (A2=1) only】

A7 「咁嗰次你喺日常生活處理或使用抗生素嘅整個療程期間，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 「『時刻保持手部衞生 』。係經常、間中，定係冇咁做呢？」

"'Practise frequent hand hygiene'"

1. 經常 [Always]
2. 間中 [Seldom]
3. 冇 [Never]
9. 唔記得 [Can't remember]

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]
2. 間中 [Seldom]
3. 冇 [Never]
9. 唔記得 [Can't remember]

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]
2. 間中 [Seldom]
3. 冇 [Never]
9. 唔記得 [Can't remember]
4. 不適用 [Not applicable]

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]
2. 間中 [Seldom]
3. 冇 [Never]
9. 唔記得 [Can't remember]
4. 不適用 [Not applicable]

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]
2. 間中 [Seldom]
3. 冇 [Never]
9. 唔記得 [Can't remember]
4. 不適用（家中沒有幼童）[No young child at home]

【只問抗生素由醫生開（A2=1）的受訪者】
【Ask those whose antibiotics were prescribed by doctors (A2=1) only】
A8 「咁嗰次你食抗生素嘅時候，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?"

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 [Can't remember or don't know whether it was cold or flu] 【跳問 A13】【skip to A13】

【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]
2. 冇 [No]
9. 唔記得 [Can't remember]

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

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]
2. 唔想 [No]
7. 冇意見 [Neutral]

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須要用抗生素？」

"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』，係唔係須要用抗生素呢？」

"Bladder infection or urinary tract infection (UTI)"

1. 須要 [Yes]
2. 唔須要 [No]
8. 唔知道 [Don't know]

A16b「『傷風感冒』，係唔係須要用抗生素呢？」

"Cold and flu."

1. 須要 [Yes]
2. 唔須要 [No]
8. 唔知道 [Don't know]

A16c「『皮膚或傷口感染發炎』，係唔係須要用抗生素呢？」

"Skin or wound infection"

1. 須要 [Yes]
2. 唔須要 [No]
8. 唔知道 [Don't know]

A16d「『周身骨痛』，係唔係須要用抗生素呢？」

"Body aches"

1. 須要 [Yes]
2. 唔須要 [No]
8. 唔知道 [Don't know]

A16e「『頭痛』，係唔係須要用抗生素呢？」

"Headaches"

1. 須要 [Yes]
2. 唔須要 [No]
8. 唔知道 [Don't know]

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]
2. 冇 [No]
9. 唔記得 [Can't remember]

A17b 「『抗生素耐藥性』，你有冇聽過呢？」

"Have you heard of 'Antibiotic resistance'?"

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

A17c 「『抗菌素耐藥性』，你有冇聽過呢？」

"Have you heard of 'Antimicrobial resistance'?"

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

【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 (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]
2. 錯／不對 [False]
8. 唔知道 [Don't know]

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]
2. 錯／不對 [False]
8. 唔知道 [Don't know]

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]
2. 錯／不對 [False]
8. 唔知道 [Don’t know]

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]
2. 錯／不對 [False]
8. 唔知道 [Don’t know]

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]
2. 錯／不對 [False]
8. 唔知道 [Don’t know]

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]
2. 錯／不對 [False]
8. 唔知道 [Don’t know]

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]
2. 錯／不對 [False]
8. 唔知道 [Don’t know]

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]　　8. 唔知道 [Don't know]
2. 錯／不對 [False]

「 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**)**
20231127	17	50	67
20231128	23	35	58
20231129	44	41	85
20231130	47	58	105
20231201	18	26	44
20231205	27	33	60
20231206	25	29	54
20231207	0	12	12
20231208	0	4	4
20231211	0	7	7
20231212	8	0	8
20231213	37	50	87
20231214	25	41	66
20231218	21	40	61
20231219	0	4	4
20231227	38	49	87
20231228	0	2	2
20231229	18	43	61
20240102	24	32	56
20240103	21	33	54
20240104	3	10	13
20240105	17	35	52
20240108	13	23	36
Total	426	657	1083

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	29 210	42 986
(B) No. of ineligible cases		
a) Valid telephone numbers		
i) Claimed wrong number	76	147
ii) Language problem	145	184
iii) Non-residential line	533	--
iv) No target respondent	12	113
b) Invalid telephone numbers		
i) Fax / data line	297	--
ii) Non-working / out of service numbers	10 855	4 730
(C) No. of eligible cases		
a) Successfully completed interviews (I)	426	657
b) Unsuccessful cases		
i) Mid-way termination cases (R)	19	29
ii) Drop out cases such as selected eligible person not-at- home / not available (DO)	215	215
iii) Refusal cases (R)	215	388
(D) No. of cases with unknown eligibility status		
a) Answering machine	885	4 266
b) Busy line	1 000	1 397
c) Call blocking, password needed	48	83
d) Immediate disconnection	3 505	5 386
e) No answer	10 979	25 391
Landline* (RR$_L$) / *Mobile* (RR$_m$) *Survey Response Rates: $= \frac{Completed\ (I)}{Completed\ (I) + Refused(R) + Drop\ Out\ Cases\ (DO)}$	*48.7%*	*51.0%*
***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 (= 426/1083= 39.3%) RR_L = landline survey response rate RR_m = mobile survey response rate	*50.1%*	

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 $i = i^{th}$ 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 i^{th} sampled individual

e_i^L= the number of eligible persons in the household of i^{th} 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 i^{th} 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.	12747.753424658
0	2	NA.	6373.876712329
0	3	NA.	4249.251141553
0	4	NA.	3186.938356164
0	5	NA.	2549.550684932
0	9	NA.	1416.417047184
0	10	NA.	1274.775342466
1	0	1	4412.260563380
1	0	2	8824.521126761
1	0	3	13236.781690141
1	1	1	3277.760131578
1	1	2	5214.694405381
1	1	3	6493.832903935
1	1	4	7401.623553063
1	1	5	8079.278179361
1	1	6	8604.465268779
1	2	1	2607.347202691
1	2	2	3700.811776531
1	2	3	4302.232634389
1	2	4	4682.729004520
1	2	5	4945.142833501
1	3	1	2164.610967978
1	3	2	2868.155089593
1	3	3	3216.647838232
1	3	4	3424.705824791
1	3	5	3562.981468459
1	4	1	1850.405888266
1	4	2	2341.364502260
1	4	3	2568.529368593
1	4	6	2844.510700144
1	5	2	1978.057133400
1	8	4	1461.514259904
2	1	1	1880.662268473
2	1	2	3277.760131578
2	1	3	4356.552000537
2	1	4	5214.694405381
2	1	6	6493.832903935
2	2	1	1638.880065789
2	2	2	2607.347202691
2	2	3	3246.916451968
2	2	4	3700.811776531
2	2	10	4945.142833501
2	3	4	2868.155089593
2	4	1	1303.673601345

No. of landline no.	No. of mobile no.	No. of eligible persons in the household	Weighting factor 1
3	1	1	1318.619691031
3	1	2	2390.017461347
3	1	3	3277.760131578
3	1	4	5713.482830104
3	2	1	1195.008730674
3	2	2	2012.671053573
3	2	3	2607.347202691
3	2	4	3059.308195943
3	3	2	1738.231468460
3	10	2	889.352350010
4	1	1	1015.218151933
4	1	2	1880.662268473
5	2	2	1382.182666864
6	2	6	2607.347202691

Note: According to OFCA's Key Statistics for Telecommunications in HK -- Wireless Service (20.12.2023), the number of public mobile subscribers was roughly 23 959 628 in Hong Kong in September 2023 (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 1.326355852 and the number of people aged 15 or above in the third quarter of 2023 (based on General Household Survey) was 6 314 500, the size of mobile phone sampling frame was estimated to be 8 375 274 (6 314 500 * 1.326355852 = 8 375 274).

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 2023) 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 i^{th} sampled individual ($WT2_i$) is derived from:

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

where N_k = Population size of k^{th} age-gender group

$WT_1 k$= Estimated size of k^{th} 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	299 900	289 600	427 473	329 297	0.701564789	0.879448542
25-34	425 800	433 700	467 537	719 003	0.910729643	0.603196738
35-44	465 700	542 200	639 468	836 778	0.728261453	0.647961870
45-54	474 300	596 400	553 950	765 259	0.856214340	0.779344364
55-64	558 600	646 000	619 387	757 418	0.901859272	0.852897575
65 or above	747 400	834 900	822 547	1 075 986	0.908640978	0.775939456

Land-based non-institutional population aged 15 and above (excluding foreign domestic helpers) by gender and age in the third quarter of 2023 (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 i^{th} sampled respondent in this survey is derived from:

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

where WT_F_i = final weighting factor of i^{th} sampled individual

$WT1_i$ = weighting factor 1 of i^{th} sampled individual

$WT2_i$ = weighting factor 2 of i^{th} 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 1,083.】

GENDER

		Unweighted		Weighted	
		Frequency	Percent	Frequency	Percent
1.	Male	484	44.7	510	47.1
2.	Female	599	55.3	573	52.9
	Total	1083	100.0	1083	100.0

AGE

		Unweighted		Weighted	
		Frequency	Percent	Frequency	Percent
1.	15-24	86	7.9	101	9.3
2.	25-34	122	11.3	147	13.6
3.	35-44	173	16.0	173	16.0
4.	45-54	182	16.8	184	17.0
5.	55-64	201	18.6	207	19.1
6.	65 or above	319	29.5	271	25.1
	Total	1083	100.0	1083	100.0