

# Internet survey on experience of and attitude toward online shopping for antimicrobials in Japan

Yoshiaki Gu<sup>1,2</sup>, Makiko Yoshida<sup>2</sup>, Kazutoshi Nakashima<sup>2</sup>, Masumitsu Hatta<sup>2</sup>, Tetsuji Aoyagi<sup>2</sup>, Shiro Endo<sup>2</sup>, Kengo Oshima<sup>2</sup>, Mitsuo Kaku<sup>1,2</sup>

<sup>1</sup>Department of Infectious Diseases, Tohoku University Hospital, Sendai, Japan;

<sup>2</sup>Department of Infection Control and Laboratory Diagnostics, Tohoku University Graduate School of Medicine, Sendai, Japan.

## OBJECTIVES

- Systemic antimicrobials are prescription drugs in Japan.
- Although over-the-counter antimicrobials are strictly prohibited by Japanese law, they can be bought online without a prescription.
- The Japanese Ministry of Health, Labour and Welfare (MHLW) issues a warning to such websites to refrain from selling prescription drugs illegally and even shuts down offending websites.
- Despite the ministry's efforts, new websites appear that invite people to buy antimicrobials without a prescription.
- The aim of our study was to elucidate people's experience of and attitude toward purchasing antimicrobials online without a prescription.

## METHODS

- We conducted an Internet survey on January 31 and February 1 in 2013 among individuals who shopped online within the past year.
- The participants were adults aged 20 to 59. Numbers of participants of each age group and gender were allocated to number of people who use internet based on governmental data.
- Individuals who purchased antimicrobials during the past year (purchasing group) and those who did not (non-purchasing group) were selected as responders.
- The purchasing group was asked to name the antimicrobials they bought and the reason for making purchases online.
- Those in the non-purchasing group who were aware that they could purchase antimicrobials online were asked about their attitude toward purchasing antimicrobials online and their willingness to do so.

## RESULTS

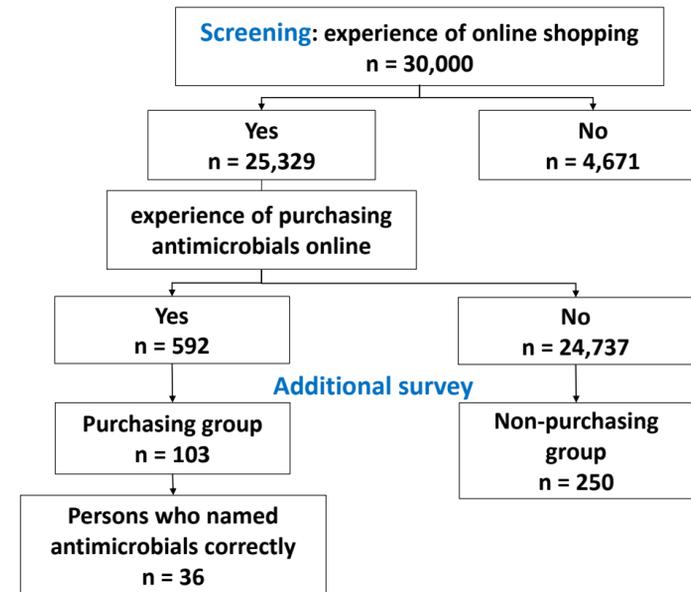


Figure 1. Flow chart showing screening and additional survey on experience of and attitude toward online shopping for antimicrobials, Japan, January 31 – February 1, 2013.

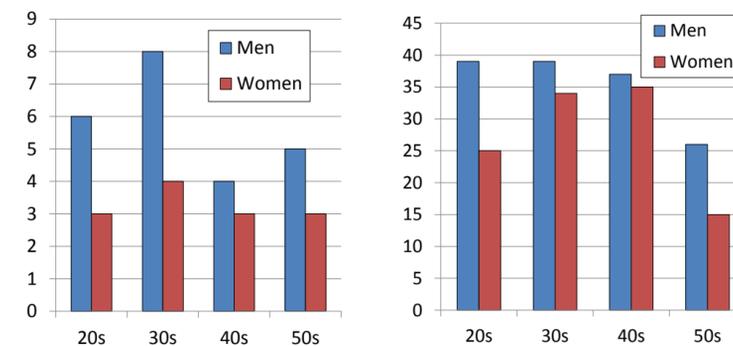


Figure 2. Age and sex distribution  
(A) Purchasing group who correctly named antimicrobials (n = 36)  
(B) Non-purchasing group (n = 250)

Antimicrobial	Number of respondents (%)
Quinolones	8 (17.4 %)
Penicillins	8 (17.4 %)
Antivirals	7 (15.2 %)
Chephalosporins	6 (13.0 %)
Antifungals	5 (10.9 %)
Macrolides	5 (10.9 %)
Tetracyclines	4 (8.7 %)
Others	3 (6.5 %)

Table 1. Antimicrobials which are purchased online (n = 36, Number of respondents (%))

Reason	Number of respondents (%)
Too lazy to visit hospitals or clinics	16 (44.4%)
Short of time to visit hospitals or clinics	14 (38.9%)
Can purchase antimicrobials whenever they like	12 (33.3%)
No need to go outside to purchase antimicrobials	9 (25.0%)
Can purchase any antimicrobials they want	7 (19.4%)

Table 2. Top five reasons for purchasing antimicrobials online, purchasing group who correctly named antimicrobials (n = 36)

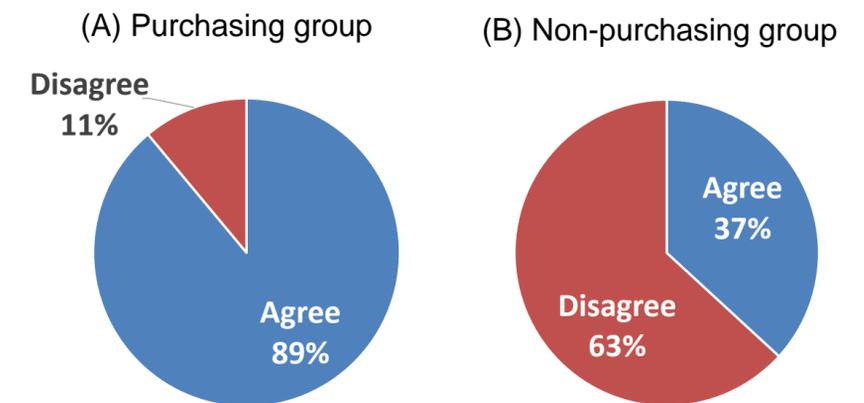


Figure 3. Attitude to future purchasing of antimicrobials online  
(A) Purchasing group who correctly named antimicrobials (n = 36)  
(B) Non-purchasing group (n = 250)

## CONCLUSIONS

- Some people in Japan purchase antimicrobials online, mainly for the convenience of shopping online.
- More than half of the individuals who purchased antimicrobials online could not correctly identify them by name.
- This indicates that some people purchase medicines online with insufficient knowledge.
- Although only a small proportion of the survey population had purchased antimicrobials online, more than one-third of individuals who had not purchased antimicrobials online indicated willingness to do so.
- These results suggest the importance of public campaigns on the role of antimicrobials.

