

Knowledge and Travel Risk Perceptions towards Antimicrobial Resistance among Hong Kong Outbound Travelers during and after COVID-19: a Longitudinal Study

TSOI Ting Fong Margaret¹, Wan In WEI¹, Edward B. McNeil¹, Margaret Ip² and Kin On KWOK¹

¹ The Jockey Club School of Public Health and Primary Care, The Chinese University of Hong Kong

² Department of Microbiology, The Chinese University of Hong Kong

INTRODUCTION

- The acquisition and spread of antimicrobial resistance (AMR) pose a significant global public health threat [1].
- Travelers play a crucial role in the global dissemination of AMR due to their mobility and exposure to foreign unimmunized environments [2].
- Understanding risk perceptions and knowledge of AMR among travelers is essential to prevent acquisition [3].
- However, related research remains limited, especially among Hong Kong frequent travelers.

Objective:

- To investigate AMR-related travel risk perception and knowledge among Hong Kong outbound travelers

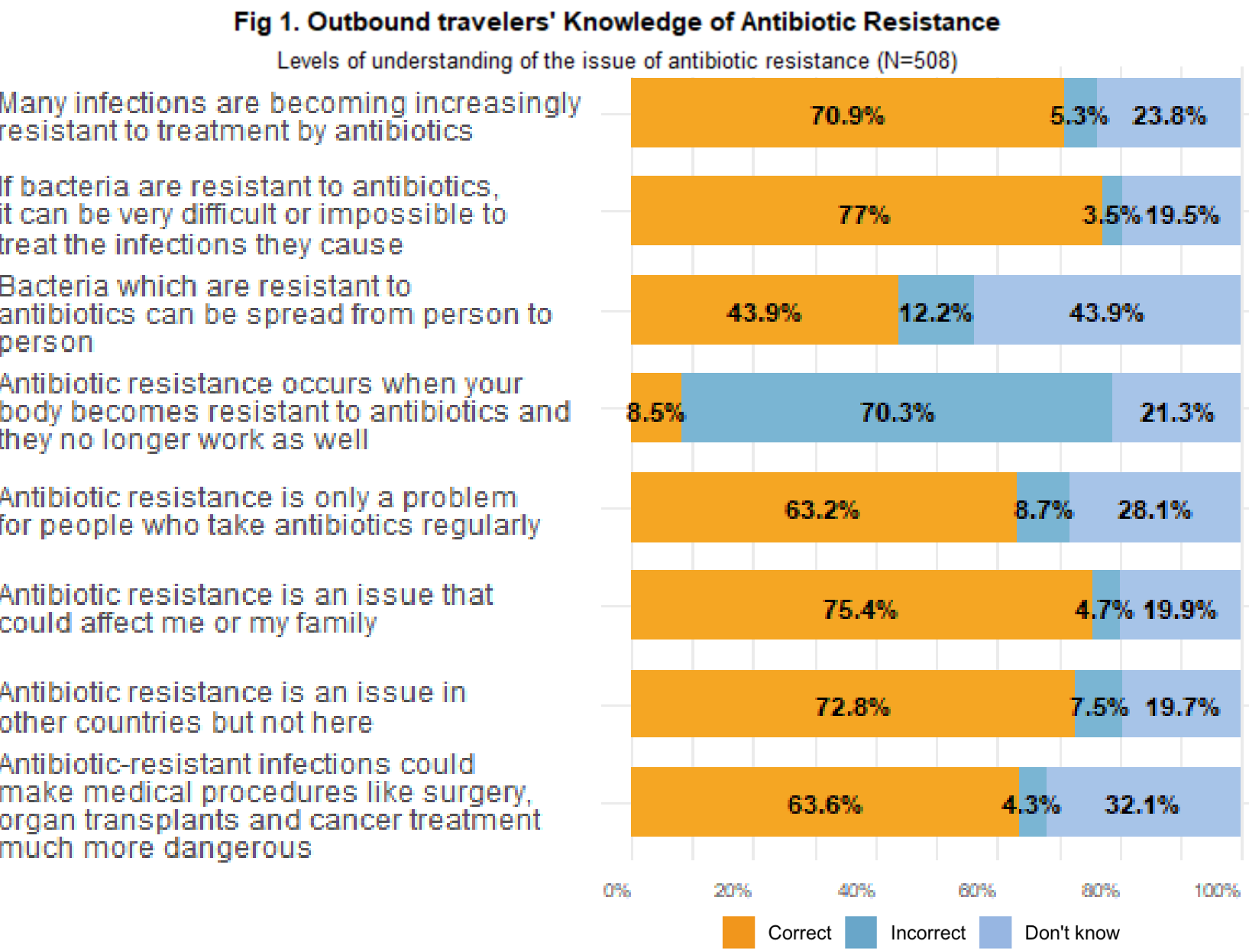


Table 1. Frequency distribution of AMR-related knowledge score (N = 508)									
Marks	0	1	2	3	4	5	6	7	8
n	59	14	21	41	44	81	102	126	20
(%)	(11.6)	(2.8)	(4.1)	(8.1)	(8.7)	(15.9)	(20.1)	(24.8)	(3.9)

Table 2. Multiple linear regression model on AMR-related knowledge score among Outbound travellers (N = 508)					
		n (%)	β	95% CI	p-value
Sex	Female	287 (56.5)	—	—	
	Male	221 (43.5)	0.67	0.29, 1.0	<0.001
Age group	2-17	20 (3.9)	—	—	
	18-39	195 (38.4)	2.2	0.92, 3.5	<0.001
	40-59	164 (32.3)	1.7	0.41, 2.9	0.010
	60 or above	129 (25.4)	2.0	0.77, 3.2	0.001
Education attainment	Never/ Primary/ Junior Secondary	54 (10.6)	—	—	
	Senior Secondary/ Diploma/ Certificate	137 (27.0)	0.32	-0.51, 1.1	0.5
	Sub-degree course/ Associates degree/ Bachelors degree/ Bachelor above	317 (62.4)	1.3	0.48, 2.2	0.002
Self-medication in past 6 months	No	217 (42.7)	—	—	
	Yes	291 (57.3)	0.34	-0.06, 0.74	0.094
Perceiving MDR bacteria is a global public health issue	No	28 (5.5)	—	—	
	Yes	480 (94.5)	1.8	0.93, 2.6	<0.001
Perceived susceptibility of AMR	Low susceptibility	132 (26.0)	—	—	
	Moderate/ high susceptibility	376 (74.0)	0.42	0.00, 0.85	0.052
Pre-travel risk perception on travel-related AMR infection	Low risk perception	356 (70.1)	—	—	
	Moderate/high risk perception	152 (29.9)	-0.46	-0.88, -0.05	0.029

RESULTS

- Complete pre-travel survey response (N = 508)
- Complete post-travel survey response (N = 516)

Male subjects, older age groups, degree or above were significantly associated with higher AMR-related knowledge score. Those who recognize multi-drug resistance (MDR) bacteria is a global issue got higher AMR-related knowledge score. However, higher pre-travel AMR risk perception was associated with lower AMR-related knowledge score.

CONCLUSION

- A substantial proportion of Hong Kong outbound travelers hold misconceptions on the occurrence and spreading of AMR, underscoring the need for foundational education to reduce potential acquisition risks during international travel.
- Many outbound travelers still perceive their risk of acquiring AMR during travel to be low. To improve risk perception regarding travel-related AMR infection, encouraging pre-travel information searches is necessary.

METHODS

- A longitudinal study conducted between July 2022 and September 2024 involved Hong Kong outbound travelers (aged ≥2 years planning trips outside Hong Kong for ≥2 days)
- Pre- and post-travel self-administrative online survey consolidated demographics, medical history, previous travel records, travel details of current travel, pre-travel risk perceptions, and AMR-related knowledge items adopted from the WHO’s Antibiotic Resistance Multi-Country Public Awareness Survey questionnaire [4]
- **Knowledge of AMR: (Range from 0 to 8 marks)**
 - True/False/Don’t know options for 8 statements
 - One mark for correct answer to a statement
 - Zero marks for wrong or “Don’t know” response
- **Pre-travel risk perception on travel-related AMR infection:**
 - a 7-point Likert scale (1 – will never happen to 7 – will definitely happen) on the likelihood of incurring AMR infection during upcoming outbound travel

Data analysis:

- Proportions and mean (95% CI) were used to describe AMR-related knowledge and pre-travel risk perception
- Multivariable linear regression models were adopted to explore the factors associated with the variables of interest

Table 3. Frequency distribution of Pre-travel risk perception on travel-related AMR infection (N = 516)							
	1	2	3	4	5	6	7
n (%)	36 (7.0)	214 (41.5)	113 (21.9)	128 (24.8)	17 (3.3)	6 (1.2)	2 (0.4)

Table 4. Multiple linear regression model on pre-travel risk perception on travel-related AMR infection among Outbound travellers (N = 516)					
		n (%)	β	95% CI	p-value
Sex	Female	293 (56.8)	—	—	
	Male	223 (43.2)	-0.10	-0.29, 0.08	0.3
Age group	2-17	20 (3.9)	—	—	
	18-39	200 (38.8)	-0.42	-0.95, 0.12	0.13
	40-59	166 (32.2)	-0.09	-0.63, 0.45	0.7
	60 or above	130 (25.2)	-0.16	-0.67, 0.35	0.5
Working status	Employed	340 (65.9)	—	—	
	Unemployed/ retired/ homemaker/students	176 (34.1)	0.11	-0.14, 0.36	0.4
Self-perceived health status	Good perceived health	465 (90.1)	—	—	
	Poor perceived health	51 (9.9)	0.50	0.18, 0.81	0.002
Doctor consultation in past year	No	322 (62.4)	—	—	
	Yes	194 (37.6)	-0.20	-0.40, 0.00	0.050
Perceived AMR transmissibility	Low transmissibility	181 (35.1)	—	—	
	Moderate/ high transmissibility	335 (64.9)	0.31	0.11, 0.52	0.003
Perceived AMR fatality	Low fatality	169 (32.8)	—	—	
	Moderate/high fatality	347 (67.2)	0.17	-0.04, 0.38	0.11
Pre-travel information searched	No	421 (81.6)	—	—	
	Yes	95 (18.4)	0.24	0.00, 0.48	0.048
Antibiotic intake in past year	No	354 (68.6)	—	—	
	Yes	162 (31.4)	-0.10	-0.31, 0.11	0.3

High proportion of outbound subjects were being wrong or unknown on the occurrence and spreading mechanism of AMR.

Higher pre-travel risk perception on travel-related AMR infection was significantly associated with poor self perceived health, consulted doctor for medical issue in the past year, moderate or high perceived AMR transmissibility and pre-travel infection search.



References:

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Funding:

This study is supported by Health and Medical Research Fund (Ref. 18170312)