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Widespread public misconception in the early phase of the H1N1 influenza epidemic

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Summary Objectives: To investigate the community responses and preparedness for a possible epidemic of H1N1 influenza in Hong Kong shortly after an imported case was confirmed. **Methods:** A random sample of 550 Chinese adults in the Hong Kong general population was interviewed during May 7–9, 2009.

Results: The public did not perceive a high likelihood of having a local H1N1 outbreak, nor did they regard H1N1 as a threatening disease. Frequent hand-washing (73.6%) and use of face-masks in case of flu symptoms (47.9%) were prevalent. The public approved of governmental policies including the quarantining of hotel guests, was not panicking and perceived a high self-efficacy of self-protection. However, misconceptions were prevalent and the public avoided visiting crowded places (9.3%), which many people wrongly believed was a government recommendation.

Conclusion: Although the public response demonstrated vigilance and preparedness there were signs of complacency. Clear communication, updated scientific information and transparency on government decision making are warranted. Data of the study provide a baseline for an ongoing surveillance program to help shape policy and provide information to the international community.

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Introduction

The new H1N1 virus raises world-wide concern about the possibility of an influenza pandemic. As of May 23, 2009, 12,022 confirmed H1N1 cases were detected in 43 countries and 86 deaths had been reported.¹ The WHO raised the influenza pandemic alert level to 'Phase 5' on April 29, 2009. A preliminary study showed that the fatality and infectivity of the new H1N1 virus is more infectious and fatal, as

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compared to seasonal influenza.² In Hong Kong, the first confirmed case, a traveler from Mexico, was reported on May 1, 2009, leading to the closure and isolation of the Metropark Hotel and to the quarantining of 350 guests and staff from May 1–May 8, 2009.³ The Hong Kong alert level was raised to the highest 'Emergency Response Level'. Six more confirmed imported cases were reported in Hong Kong from May 13 to May 24, 2009.

Surveillance of community responses at the beginning of an emerging epidemic is particularly useful to inform the government and the public of the level of preparedness. The SARS epidemic affected 26 countries and claimed 774 lives.⁴ Hong Kong was one of the worst affected countries; 299 lives were lost^{5,6}; panic was wide-spread and the economic loss created severe hardship in the community. The lessons learned from the SARS experience in Hong Kong⁷ and other countries demonstrated the importance of understanding community responses.^{8,9}

In Hong Kong, SARS-related perceptions and behaviors changed dramatically during the early phase of the outbreak.^{8,10–12} The prevalence of preventive behaviors increased sharply and remained high throughout the epidemic,^{8,13} and such measures contributed its control.¹⁴ Panic and worry were wide-spread during the epidemic and remained high in the post-SARS period.^{15,16} The general public avoided going out, avoided traveling to other countries and avoided social activities to a large extent.⁸ There were misperceptions about the nature of the epidemic (e.g., mode of transmission).⁸ However, a substantial proportion of the general public doubted the government's ability to control the SARS epidemic.¹⁵ Travelers were less likely to adopt preventive measures when they were out of Hong Kong¹⁷ and those visiting mainland China delay seeking medical consultation for flu symptoms and waited until their return to Hong Kong.¹⁸ Similar studies were conducted to investigate community preparedness toward human-to-human H5N1 transmissions.^{19–22}

The objectives of this study was to investigate the community responses and preparedness for a possible epidemic of H1N1 influenza in Hong Kong, amongst the general population between Day 7 and Day 9 following identification of the first confirmed H1N1 case in Hong Kong. The results serve as baseline data of a series of ongoing surveillance studies on the H1N1 epidemic. No similar studies have been reported.

Materials and methods

Sampling and data collection

The study population comprised of all Chinese Hong Kong adults who were 18–60 years old. Anonymous telephone interviews were conducted by well-trained interviewers, using a structured questionnaire. Random telephone numbers were selected from an up-to-date telephone directory and over 95% of the households in Hong Kong have a fix-line telephone at home.²³ The interviews were conducted from 6:30 to 10 p.m. to avoid over-representing the non-work population. One member was selected by the last-birthday-rule from each of the contacted households. Verbal

consent was sought and the study was approved by the ethics committee of the Chinese University of Hong Kong. A total of 889 eligible respondents were identified, 265 (29.8%) refused to join the study, 55 (6.2%) could not be contacted, 19 (2.1%) did not complete the interview and 550 completed the interview. The response rate was hence 61.9% (550/889).

Measures

The structured questionnaire took about 20 min to complete. The items were modified from the questionnaire which was used in some avian flu studies^{19–22,24} and some SARS studies.^{8,13,15,16}

Data analysis

Descriptive results are presented in this report. SPSS version 16.0 was used for data analysis.

Results

Socio-demographic characteristics

The distributions are presented in Table 1. The age and gender compositions are more or less comparable to those of the recent census data (see footnote of Table 1).

Knowledge, misconceptions and unconfirmed beliefs

Of all respondents, 43.1% wrongly believed that the new H1N1 influenza is one type of avian flu. The prevalence of unconfirmed beliefs related to modes of transmission were high: 'via eating well-cooked pork' (6.9%), 'via long-distance airborne aerosols (from one building to another)' (39.0%), 'via insect bites' (25.3%) or 'via water sources (such as rivers or reservoirs)' (39.5%). The majority of the respondents (66.5%) possessed at least one of the 4 aforementioned misconceptions or unconfirmed beliefs (with 29.8% with ≥ 2 items).

In contrast, the prevalence of respondents not knowing that the virus is transmittable via droplets, via contact with affected persons and contact with contaminated objects were, respectively, 2.0%, 24.8% and 21.1% (39.2% gave ≥ 1 wrong answers to these 3 questions). A total of 38.7% wrongly believed that influenza vaccine against seasonal flu could effectively or very effectively protect one against the new H1N1 virus, and 42.9% believed that there are no effective drugs available to treat the disease.

Perceived risk, perceived susceptibility and perceived severity of the H1N1 epidemic

Only 22.1% of the respondents believed that there would be an outbreak of H1N1 in Hong Kong in the coming 12 months; corresponding figures for anticipating outbreaks in mainland China and in other countries were much higher (50.5% and 46.9%). Similarly, 53.6% and 48.1%

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