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ADMINISTRATIVE MEDICINE

Part I Examination

Tuesday 7 June 2016

17:30 – 19:00 (1½ hours)

Paper IIB

Candidates must answer all parts of this questions

Style, clear grammatical English and legibility will be taken into consideration by the Examiners. Answers should be written in a form appropriate to the audience specified in the question.

Weighting of marks for each part of the question is shown in parenthesis.

**DO NOT OPEN PAPER UNTIL THE INVIGILATOR
INSTRUCTS YOU TO BEGIN**

Public risk perception and attitudes towards live poultry markets before and after their closure due to influenza A(H7N9), Hong Kong, January–February 2014

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ABSTRACT

Background The study investigated public risk perception regarding influenza A(H7N9) and attitudes towards closure of live poultry markets (LPMs) before and after LPMs closed in Hong Kong.

Methods Two population-based surveys were conducted before and after LPMs closed in January–February 2014, respectively. Adults were recruited using random digital dialing.

Results In total, 670 and 1011 respondents completed the survey before and after closure of LPMs, respectively. Perceived susceptibility to H7N9 infection was low across surveys. Among respondents who completed the survey after LPMs closed, only 14.6% agreed that temporary closure of LPMs caused inconvenience to the daily life; 38.7% valued the Chinese tradition of live poultry consumption more than controlling the risk of avian influenza; 54.6% recognized greater risk of influenza epidemic associated with LPMs. Support for permanent closure of LPMs which was comparably low across surveys was strongly associated with perceived risk of avian influenza related to LPMs, the effectiveness of LPM closure in control of avian influenza and the inconvenience caused by closure.

Conclusions Risk communication that promotes people's perceived risk of avian influenza associated with LPMs and the effectiveness of LPM closure in control of avian influenza outbreaks may improve support for permanent closure of LPMs.

Keywords attitudes, avian influenza a(H7N9), live poultry markets

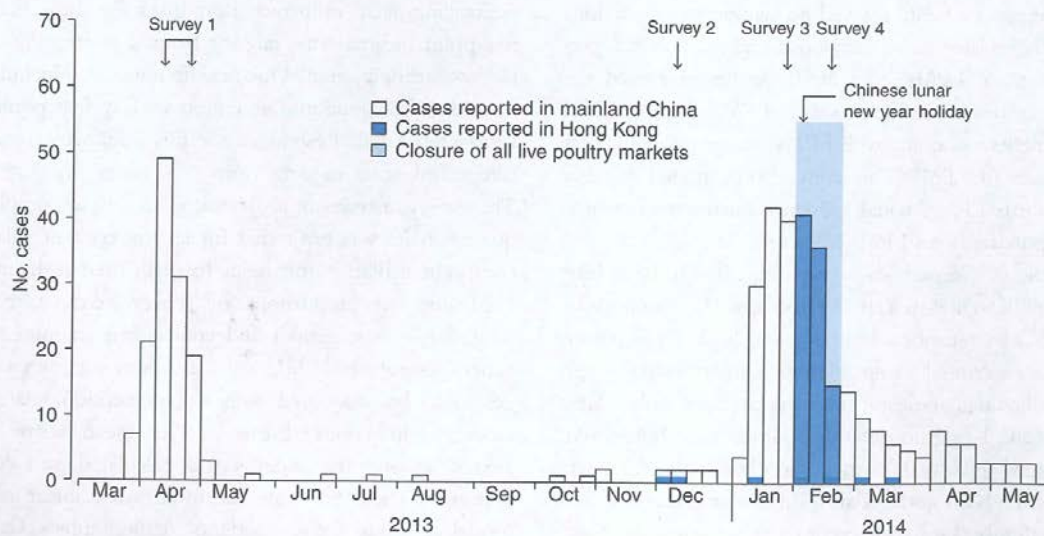


Fig. 1 Number of laboratory-confirmed human cases of H7N9 infection in mainland China and Hong Kong, by date of announcement, and timing of the closure of LPMs in Hong Kong, the Chinese LNY holiday and the population surveys.

Table A1 Questions and response scales for state anxiety, H7N9-related risk perception, attitudes towards permanent closure of LPMs

Measure	Question	Response scale	Dichotomous scale
State anxiety ^a	Ten items for a validated state-anxiety scale of the State-Trait Anxiety Inventory (STAI) ^b : 1. I feel rested; 2. I feel content; 3. I feel comfortable; 4. I am relaxed; 5. I feel pleasant; 6. I feel anxious; 7. I feel nervous; 8. I am jittery; 9. I feel 'high strung'; 10. I feel over-excited and 'rattled'	1 = not at all, 2 = sometimes, 3 = Moderately so, 4 = very much so	-
H7N9-related risk perception			
Perceived personal susceptibility to H7N9	How likely do you think it is that you will contract H7N9 avian flu over the next 1 month?	1 = never, 2 = very unlikely, 3 = unlikely, 4 = evens, 5 = likely, 6 = very likely, 7 = certain	1 = 'likely/ very likely/ certain', 0 = 'never/ very unlikely/ unlikely/ evens'
Perceived personal susceptibility compared to others	What do you think are your chances of getting H7N9 over the next 1 month compared to other people of similar age?	1 = not at all, 2 = much less, 3 = less, 4 = evens, 5 = more, 6 = much more, 7 = certain	1 = 'more/ much more/certain', 0 = 'not at all/ much less/ less/ evens'
Perceived severity of H7N9 infection compared with seasonal influenza	How does H7N9 compare with seasonal flu in terms of seriousness?	1 = much less, 2 = less, 3 = about the same, 4 = more, 5 = much more	1 = 'more/ much more/certain', 0 = 'not at all/ much less/ less/ evens'
Perceived severity of H7N9 infection compared with H5N1	How does H7N9 compare with H5N1 in terms of seriousness?		
Perceived severity of H7N9 infection compared with SARS	How does H7N9 compare with SARS in terms of seriousness?		
Anticipated worry if developing flu-like symptoms	If you were to develop flu-like symptoms tomorrow, would you be ...	1 = not at all worried, 2 = much less worried than normal, 3 = worried less than normal, 4 = about the same, 5 = worried more than normal, 6 = worried much more than normal, 7 = extremely worried	1 = 'worry more/much more than normal or extremely worry', 0 = 'worry about the same/less/much less than normal/not at all worried'
Past-week worry	In the past one week, have you ever worried about catching H7N9?	1 = never worried about it, 2 = slightly worried, 3 = moderately worried, 4 = extremely worried	1 = 'Slightly/moderately/extremely worried',
			0 = 'never worried about it'

^aA mean score of the ten items was calculated to indicate respondents' state anxiety whereas '1' indicated no anxiety and '4' indicated the highest level of anxiety.

^bSpielberger C, Gorusch R, Luschene R. *State Trait Anxiety Inventory: A Test Manual/Test Form*. Palo Alto, CA: Consulting Psychologists Press; 1970.

Table 2 Public attitudes and risk perception before and after closing LPM, Hong Kong, 2014

<i>Attitudes and risk perception</i>	<i>S1 (10–13, 25–27 Apr 2013)^a (n = 1556)</i>	<i>S2 (4–8 Dec 2013)^a (n = 1000)</i>	<i>S3 (23–28 Jan 2014) (n = 670)</i>	<i>S4 (12–17 Feb 2014) (n = 1011)</i>	<i>Difference (P-value)^b</i>
Population state anxiety (mean)	1.81	1.79	1.84	1.83	0.917
Risk perception of/from H7N9					
Susceptibility to H7N9 (likely/very likely/certain)	12.1%	9.3%	14.3%	11.1%	0.102
Susceptibility to H7N9 compared to others (more/much more/certain)	2.3%	1.3%	3.4%	3.1%	0.697
Severity compared with seasonal influenza (a little higher/much higher)	88.1%	88.3%	61.5%	63.2%	0.663
Severity compared with H5N1 (a little higher/much higher)	79.1%	81.6%	38.1%	34.3%	0.142
Severity compared with SARS (a little higher/much higher)	39.5%	28.8%	10.0%	9.4%	0.482
Anticipated worry if developing flu-like symptoms (worried more/much more than normal/extremely worried)	44.8%	37.3%	36.1%	42.0%	0.052
Past-week worry (Slightly/moderately/extremely worried)	–	–	11.1%	11.7%	0.566
Support for permanent closure of LPMs	–	35.9%	35.2%	32.3%	0.302
Attitudes (agree/strongly agree):					
Permanent closure of LPMs would cause great inconvenience	–	–	16.4%	36.1%	<0.001
Temporal closure of LPMs caused great inconvenience	–	–	–	14.6%	–
Permanent closure of LPMs caused inconvenience financially	–	–	–	9.0%	–
The Chinese tradition of buying live poultry during the Chinese LNY should not be stopped by the risk of avian influenza	–	–	–	38.7%	–
We can no longer afford to risk influenza epidemic in Hong Kong because of traditional foods	–	–	–	54.6%	–
Permanent closure of LPMs is effective to control the risk of avian influenza outbreak	–	–	–	50.5%	–
Closure of LPMs was an over-reaction by the government	–	–	–	41.1%	–
There is no difference in taste between chilled and live poultry	–	–	–	44.8%	–

^aThe data of S1 and S2 have been published in previous study⁷ and were included for reference.

^bAll P-values indicate the difference of measures in S3 and S4 and were adjusted for gender, age, educational attainment, marital status and place of birth.

Table 3 Demographic and attitudinal factors associated with support for permanent closure of LPMs and intention to buy live poultry after the markets reopened

<i>Independent variables</i>	<i>Support for permanently closing LPMs OR (95% CI)^a</i>	<i>Intention to buy live poultry after the LPMs reopened OR (95% CI)^a</i>
Sex		
Female	1.00	1.00
Male	1.02 (0.73–1.43)	1.13 (0.77–1.66)
Age group (Years)		
18–34	1.00	1.00
35–54	2.53 (1.42–4.49)**	1.17 (0.62–2.23)
≥55	2.60 (1.44–4.68)**	1.34 (0.69–2.62)
Education		
Primary or below	1.00	1.00
Secondary	1.25 (0.79–1.99)	0.95 (0.57–1.59)
Tertiary or above	1.71 (0.99–2.94)	1.05 (0.57–1.95)
Place of birth		
Hong Kong	1.00	1.00
Other places	0.91 (0.64–1.29)	1.09 (0.73–1.64)
Marital status		
Single	1.00	1.00
Married/formerly married	1.52 (0.92–2.50)	0.90 (0.52–1.58)
Bought live poultry over the past one year (buy versus not buy)	0.94 (0.61–1.43)	4.22 (2.82–6.31)***
Attitudes (Strongly agree/agree versus strongly disagree/disagree/evens)		
We can no longer afford to risk influenza epidemic in Hong Kong because of traditional foods	2.77 (1.94–3.96)***	0.77 (0.52–1.14)
Permanent closure of LPMs is effective to control the risk of avian influenza outbreaks	4.20 (2.96–5.97)***	0.85 (0.57–1.27)
The Chinese tradition of buying live poultry during the Chinese LNY should not be stopped by the risk of avian influenza	1.07 (0.76–1.52)	1.06 (0.72–1.56)
Permanent closure of LPMs would cause great inconvenience	0.33 (0.22–0.48)***	3.43 (2.32–5.08)***
Closure of LPMs was an over-reaction by the government	0.58 (0.40–0.83)**	1.54 (1.03–2.29)*
There is no differences between the taste of chilled and live poultry	1.58 (1.14–2.20)**	0.57 (0.38–0.87)**

^aOR, odds ratios adjusted for all variables shown in the table; 95%CI: 95% confidence interval.

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$.

This is a study on Hong Kong people's risk perception on an emerging infection (H7N9 influenza) from 2013 to 2014, and their attitude towards live poultry market (LPMs) closure. Fig. 1 shows the timing of four similar surveys, in relation to the time of outbreaks in mainland China and Hong Kong, and the government's action to temporarily close the LPMs around the Chinese Lunar New Year period in 2014.

- 1.i. What health policy question is this research study trying to help answer? (4 marks)
 - ii. Comment on how the timing of Survey 3 and Survey 4 may help to address the policy question that you identified. (6 marks)
2. Drawing information from Fig. 1, comment on the results in Table 2 on common items (boxed) that are covered in both S3 and S4 surveys. (20 marks)
3. Contrast the demographic and attitudinal characteristics of those who tended to support permanent closure of LPMs versus those who did not, substantiating your answer by results shown in Table 3 (boxed). (30 marks)

QUESTION CONTINUES

- 4.i. From the results across all four surveys in Table 2 and results in Table 3, what conclusions can you draw to advise the government on the policy of permanent closure of LPMs to prevent H7N9 infection in Hong Kong? (20 marks)
- ii. What risk communication strategy or other strategies should be adopted to increase the chance of policy acceptance? (20 marks)

END OF PAPER