Author's response to reviews

Title: Knowledge, attitudes and practices (KAP) relating to avian influenza in urban and rural areas of China

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Author's response to reviews: see over
Dear Prof. Norton and colleagues,

Thank you very much for BMC Infectious Diseases’ consideration of our manuscript, MS: 1282135884293144, “Knowledge, attitudes and practices (KAP) relating to avian influenza in urban and rural areas of China”. We appreciate the reviewer’s helpful comments and suggestions very much and have tried to address all of his concerns. In particular, two tables and paragraphs have been added to describe the multivariate analysis for possible influencing factors of knowledge and attitude scores among urban residents in Shenzhen City and rural villagers in Xiuning County, as suggested. We have also added the median score and interquartile range (IQR) for knowledge and attitudes of the two groups, and a comparison has been described, illustrated by two tables. A new reference about a KAP survey conducted in Hong Kong, SAR has been cited to compare with our study’s results. We agree with the reviewer’s comment that a statement of the scoring method used in our study is necessary, therefore, a paragraph has been added to the discussion to clarify the limitation of this method. In addition, the questionnaire (translated into English) has also been provided, along with detailed information about its development and validation.

We believe that we have satisfactorily addressed all of the reviewer’s comments, suggestions and questions in this revised manuscript. We have attached a point-by-point response to the reviewer’s comments. These comments have substantially strengthened our revised manuscript and we appreciate the feedback.

Please let us know if there are any additional questions or suggestions to improve our manuscript. On behalf of me and my co-authors, Dr. Peng Zhibin, co-author of our manuscript, will be responsible for handling further prepublication issues and enquiries. Her contact information is as follows:
On behalf of my co-authors, I thank you very much for considering our revised manuscript for publication in BMC Infectious Diseases.

Sincerely,

Hongjie Yu, MD MPH
Point by point response to the concerns

- Minor Essential Revisions
- Answers and Comments

1) Page 4 “To date”: consider replacing by “On the” actual date the WHO webs was accessed.
   Yes, we have revised.

2) Page 4, 3rd paragraph: consider repeating (2nd paragraph) that there is limited data on KAP associated with AI in general population exposed to poultry.
   Paragraph 2 described the exposure to poultry in urban and rural human H5N1 cases in mainland China, but paragraph 3 states the situation of KAP with regards to avian influenza among the Chinese general population. There does not seem to be repetition between the two paragraphs.

3) Page 5, 2nd paragraph: consider providing information on rural vs. urban areas in the same order throughout this para (and the text).
   We have changed the order of urban vs. rural throughout the text to match that order in the title of the manuscript.

4) Median/range score values (knowledgeable, concerns) should be provided in Results and Table. So far, only the dichotomized score was provided for knowledgeable is provided in Table 2.
   We have added median, range and IQR values of knowledge and attitudes associated with AI of urban residents in Shenzhen and rural villagers in Xiuning (see Tables 3 and 4).

5) Page 8, 2nd paragraph: replace (p<.004) by the correct p-value in Table 2 (p<.04)
   Yes, we have revised.

6) Page 9, 3rd paragraph. There is no space limitation in BMC journals. Please consider providing the median score and IQR for concerns in the Text and add a corresponding Table. I would suggest to provide a table for each of KAP with all questions asked.
   In the questionnaire (see Appendix), there are a total of 15 questions about sources of knowledge of AI, and KAP of AI. Five of these ask about sources of knowledge, type of information requested about AI, and ways to obtain the information about AI, which have been listed in Table 1. Five asked respondents to estimate their knowledge of AI, which have been listed in Table 2. Only three questions asked about attitudes to AI, which included concerns about AI infection of family and friends, fear of visiting public places and catching the virus, and general concerns about human infection with the virus, measured by confidence in the government’s response to AI. Considering the small number of such questions on this issue, we only described these findings in the text.
   We also added the median, range and IQR values of attitudes associated with AI for urban residents in Shenzhen and rural villagers in Xiuning (see Table 4). The comparison between the two groups’ concerns associated with AI is also provided in Table 4.
7) Page 10, 1st paragraph. “Age and level of education were likely the main factors giving rise to these differences”. Why the authors did not check this assumption (and others) with appropriate multivariate analysis including individual characteristics but also sources of information?

We have added a multivariate analysis for possible influencing factors of AI knowledge and attitudes in urban residents and rural villagers, involving individual characteristics such as age, gender, education level, occupation, requests for AI information, and knowledge scores as independent variables. Questions regarding sources of information were multiple choice, so it was not appropriate to include them in the linear multiple regressive model for analysis of possible influencing factors associated with participants' AI knowledge and attitudes. For a detailed analysis of the results see Table 4 and Table 6.

8) Pages 11 and 12 with references 11 and 14. I am not sure how KAP surveys conducted in Italy could add anything to the AI outbreaks in Asia. Moreover, socioeconomics discrepancies make any comparison useless. I would suggest to delete these comparisons and references, and provide more comparative details on KAP surveys conducted in Asia.

The findings in different countries with various socioeconomic and cultural factors is intended to provide references and evidence for policy-making and health promotion campaign development, especially regarding social and scientific behaviors related to disease control and prevention. Meanwhile, there are very few KAP survey studies on AI in Asia, most of which were conducted in Hong Kong and southeast Asian countries such as Cambodia and Thailand. Therefore, we would like to keep the comparison.

We have also added some new details of a KAP survey conducted in Hong Kong, which would be more comparable.

9) Limitations: There are no limitations stated in the Discussion. I would suggest to discuss the scores (Knowledge, attitudes) used. Were these scores validated in China? Ad-hoc appropriation?

Yes, we have added this content.

Information about questionnaire development and validation:

During questionnaire development, a literature review was firstly used to identify information about KAP surveys of AI, then a structured questionnaire draft was developed according to the informational elements. After several group discussions and expert consultations, a normal version was confirmed for use in logicality and acceptability evaluation in a small group of people in Beijing by convenience sampling. Following revisions according to the findings of this pilot survey, a second pilot survey was conducted in the study sites (50 urban residents in Shenzhen city and 50 rural villagers in Xiuning county, separately) to examine the questionnaire and manual of procedure for the survey. Following these processes, the questionnaire was finally validated for use.
Appendix

Population-Based Assessment of Avian Exposure and Knowledge, Attitudes and Practices (KAPs) Associated with Avian Influenza in Shenzhen and Xiuning area of China

Good morning/afternoon/evening.

I am from China CDC. This investigation is a population-based assessment of avian exposure and knowledge, attitudes and practices (KAPs) associated with avian influenza in the Shenzhen and Xiuning area of China, and has been organized by China CDC. From this study we can get the prevalence of exposure to wet poultry markets and the prevalence of KAPs associated with AI that could help the government develop strategies and health education campaigns in AI control and prevention.

You have been selected randomly from Shenzhen city; we would like to know some information about your exposure to the poultry market, and knowledge, attitudes and practices relating to bird flu. No personal information will be gathered. I am going to ask you several questions. Please understand that there is no right or wrong answer; just answer the questions to the best of your ability. We need you to answer all questions by yourself (For children: if you can’t understand the questions you can get help from your parents or guardian). It will take about 20-30 minutes to help me answer these questions. If you would like to take part in this survey we promise that all the answers will only be used by the researchers and you will get a gift after you finish the questionnaire. You can feel free to stop the survey at any time if you like, and if you have any questions please tell me and I’ll try my best to help you.

If you consent to complete the questionnaire, let’s begin. Thank you!

Consent by subject: □
Consent by parents or guardian: □

Date:______ Year ______ Month______ Day

Chinese Center for Disease Control and Prevention
2007-6
Questionnaire of Population Based Assessment of Avian Exposure and Knowledge, Attitudes and Practices (KAPs) Associated with Avian Influenza in Shenzhen

Household ID:  
Family number ID:  

Part 1: Demographic information  
1. Gender:  
   ① Male  
   ② Female  
2. How old are you?  
3. What is your highest education level?  
   ① Illiterate  
   ② Primary school  
   ③ Middle school  
   ④ High school  
   ⑤ College and above  
4. What is your occupation?  
   ① Employed  
   ② Unemployed  
5. If you are unemployed, what is the reason?  
   ① Student  
   ② Housewife  
   ③ Unemployment  
   ④ Retired  
   ⑤ Other  

Part 2: Exposure to wet markets  
1. How often do you have contact with birds when you buy live poultry?  
   (If answer ③ OR ④, then go to QUESTION 3)  
   ① Frequently  
   ② Sometimes  
   ③ Never  
   ④ Unclear  
2. How often did you touch skin mucous membranes like the eyes, nose and lips after touching live poultry?  
   ① Frequently  
   ② Sometimes  
   ③ Never  
   ④ Unclear  
3. How often do you have contact with the birds’ cages?  
   (If answer ③ OR ④, then go to Part 3)  
   ① Frequently  
   ② Sometimes
3. Never
4. Unclear

4. How often did you touch the skin mucous membranes like the eyes, nose and lips after touching the cages?
   1. Frequently
   2. Sometimes
   3. Never
   4. Unclear

**Part 3: KAP of avian influenza (<15 years needn’t answer this part)**

1. Have you heard about bird flu?
   1. Yes
   2. No (If answer ☐, then go to QUESTION 15)

2. From where did you learn about the bird flu?
   - Television
   - Radio
   - Newspaper
   - Internet
   - Friends/family
   - Health care facility
   - Other

3. Is bird flu a kind of infectious disease?
   - Yes
   - No
   - Unclear

4. Can people get bird flu by touching sick poultry?
   - Yes
   - No
   - Not sure
   - Unclear

5. Can bird flu be prevented?
   - Yes
   - No
   - Not sure
   - Unclear

6. Can bird flu be cured?
   - Yes
   - No
   - Not sure
   - Unclear

7. Do you believe human bird flu is associated with the environment in wet markets?
   - Yes
   - No
   - Unclear

8. Do you worry about your family/friends getting bird flu?
   - Yes
9. Do you fear going to public areas due to bird flu?
□ Yes
□ No
□ Not sure
□ Unclear

10. Do you believe that the government can control the bird flu pandemic?
□ Yes
□ No
□ Not sure
□ Unclear

11. Would you like to get more information about bird flu? (If answer □ OR □, then go to QUESTION 14)
□ Yes
□ No
□ Don’t care

12. What special information on bird flu would you like to know?
① Basic knowledge
② Prevention methods
③ Treatment
④ Epidemic announcements
⑤ Other

13. What are the best ways to get this information to you?
□ Television
□ Radio
□ Newspaper
□ Internet
③ Friends/family
④ Health care facility
□ Other

14. Compared to the period of time before the spread of bird flu, would you say that you are eating:
□ More poultry
□ Less poultry
□ Almost the same amount of poultry
□ No poultry
□ I never eat poultry

15. How do you usually wash your hands?
□ With water
□ With water and soap
□ With an antibacterial solution
□ Other
□ Never wash hands
The interview is finished, thank for your cooperation!

Interviewer:__________ Interview date:__/__/__(y/m/d)  
Check:__________ Check date:__/__/__(y/m/d)
Population Based Assessment of Avian Exposure and Knowledge, Attitudes and Practices (KAPs) Associated with Avian Influenza in Shenzhen and Xiuning area of China

Good morning/afternoon/evening.
I am from China CDC. This investigation is a population based assessment of avian exposure and knowledge, attitudes and practices (KAPs) associated with avian influenza in the Shenzhen and Xiuning area of China, and has been organized by China CDC. From this study we can get the prevalence of exposure to sick/dead poultry and the prevalence of KAPs associated with AI that could help the government develop strategies and health education campaigns in AI control and prevention.
You have been selected randomly from Xiuning county; we would like to know some information about your exposure to sick/dead poultry, raising poultry, and knowledge, attitudes and practices relating to bird flu. No personal information will be gathered. I am going to ask you several questions. Please understand that there is no right or wrong answer; just answer the questions to the best of your ability. We need you to answer all questions by yourself (For children: if you can’t understand the questions you can get help from your parents or guardian). It will take about 20-30 minutes to help me answer these questions. If you would like to take part in this survey we promise that all the answers will only be used by the researchers and you will get a gift after you finish the questionnaire. You can feel free to stop the survey at any time if you like, and if you have any questions please tell me and I’ll try my best to help you.
If you consent to complete the questionnaire, let’s begin. Thank you!

Consent by subject: □
Consent by parents or guardian: □

Date: _____Year _____Month _____Day

Chinese Center for Disease Control and Prevention
2007-6
Questionnaire of Population Based Assessment of Avian Exposure and Knowledge, Attitudes and Practices (KAPs) Associated with Avian Influenza in Xiuning

Household ID:  
Family number ID:  

Part 1: Demographic information  
1. Gender:  
☐ Male  
☐ Female  
2. How old are you? ___ Or birth date: ___/___/___(y/m/d)  
3. What is your highest education level?  
① Illiterate  
② Primary school  
③ Middle school  
④ High school  
⑤ College and above  
4. What is your occupation?  
① Farmer  
② other __________  

Part 2: Exposure to sick/dead poultry in backyard  
1. Have you had direct contact with dead poultry in the past year? (If answer ☐ OR ☐, then go to PART 3)  
☐ Yes  
☐ No  
☐ Unclear  
2. Did you wash your hands after touching the dead poultry?  
☐ Yes  
☐ No  
☐ Unclear  

Part 3: KAPs of avian influenza (<15 years needn’t answer this part)  
1. Have you heard about bird flu?  
☐ Yes  
☐ No (If answer ☐, then go to QUESTION 15)  
2. From where did you learn about the bird flu?  
☐ Television  
☐ Radio  
☐ Newspaper  
☐ Internet  
☐ Friends/family  
☐ Health care facility  
☐ Other
3. Is bird flu the same as avian plague?
   □ Yes
   □ No
   □ Unclear

4. Is bird flu a kind of infectious disease?
   □ Yes
   □ No
   □ Unclear

5. Can people get bird flu by touching sick poultry?
   □ Yes
   □ No
   □ Not sure
   □ Unclear

6. Can bird flu be prevented?
   □ Yes
   □ No
   □ Not sure
   □ Unclear

7. Can bird flu be cured?
   □ Yes
   □ No
   □ Not sure
   □ Unclear

8. Do you worry about your family/friends getting bird flu?
   □ Yes
   □ No
   □ Not sure
   □ Unclear

9. Do you fear going to public areas due to bird flu?
   □ Yes
   □ No
   □ Not sure
   □ Unclear

10. Do you believe that the government can control the bird flu pandemic?
    □ Yes
    □ No
    □ Not sure
    □ Unclear

11. Would you like to get more information about bird flu? (If answer □ OR □, then go to QUESTION 14)
    □ Yes
    □ No
    □ Don’t care

12. What special information on bird flu would you like to know?
    □ Basic knowledge
    □ Prevention methods
13. What are the best ways to get this information to you?
- Television
- Radio
- Newspaper
- Internet
- Friends/family
- Health care facility
- Other

14. Compared to the period of time before the spread of bird flu, would you say that you are eating:
- More poultry
- Less poultry
- Almost the same amount of poultry
- No poultry
- I never eat poultry

15. How do you usually wash your hands?
- With water
- With water and soap
- With an antibacterial solution
- Other
- Never wash hands

The interview is finished, thank for your cooperation!

Interviewer:___________ Interview date: ____/____/____/(y/m/d)
Check:_______________ Check date: ____/____/____/(y/m/d)