Reviewer's report

Title: Changing Risk Awareness and Personal Protection Measures for Low to High Pathogenic Avian Influenza in Live-Poultry Markets in Taiwan, 2007 to 2012

Version: 4
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Reviewer: Eric Lau

Reviewer's report:

The authors have extensively revised and improved the manuscript. The revised analysis on changes in perception is now more interpretable by restricting the analysis to Central Taiwan. Interestingly, the perception on vaccine effectiveness decreased significantly after the two H5N2 outbreaks. However, there are still some methodological details that need to be clarified.

Major Compulsory Revisions

Methods

1. It is suboptimal to treat education level as a continuous variable, as the categorization is somehow arbitrary (e.g. junior/second high schools as two categories) which made the results less interpretable. Is there any reason why categorical variable is not considered? If sample size is a concern, it is appropriate to merge two or more levels.

2. Appendix 4, please clarify the original wording of the question a). Were you asking about “greater influence” or some influence?

Results

3. Table 4, item 1, it seems to me that “Believe human AIV outbreaks in Taiwan will be associated with the outbreaks of AIV in China” is very similar to “Taiwan will be affected by the outbreaks of influenza in China”. What is the purpose of including it as an explanatory factor of the outcome in item 1?

4. Table 2, 4, it was stated that age was a continuous variable. Why was there some ‘reference’ group? Could the authors clarify if the exact age was used or the categorical age groups were treated as a continuous variable? For the latter case it is not so appropriate as the class width for each age category was not equal.

5. Appendix 3, could the authors clarify which R2 statistics were used for the logistic regression? I also note that the adjusted R2 are always greater than R2.

6. Table 2, 4, Appendix 3 shows that R-squared were generally very low for both surveys at Stage I and II (most of them around or less than 0.1). In the methods, it was mentioned that stepwise selection method was adopted but it’s unclear if the listed important confounding variables such as age, gender, residential areas were removed in the model if it was significant. A better modeling strategy is to keep these important confounders in the model irrespective of their significance.
7. P. 19, line 13, “… all neglected the danger of AIVs, particularly LPAIVs” is not an appropriate conclusion from the logistic regression analysis. The results only showed a relatively lower risk perception or compliance of preventive measures compared to the reference group.

Minor Essential Revisions
8. P.21, line 15, do you mean the risk of AI was perceived to be higher?
9. P.26, line 9, please delete the link to Wikipedia for “one-health”
10. Table 7, the % of LPMW / CR knowing about the HPAI outbreak in Central Taiwan is better presented in the table rather than in the header
11. Table 8, the dependent of the model (willingness to take preventive measures) should be better clarified in the title, rather than in the footnote

Discretionary Revisions
12. Appendix 4, question e), I wonder if separating the perceived vaccine effectiveness on human and birds will provide further insight on the impact of LPAI and HAPI H5N2 outbreaks? The coding may mask the potentially even larger magnitude of decrease perceived effectiveness of the avian vaccine.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests