Reviewer's report

**Title:** A survey of knowledge, attitudes and practices towards avian influenza in the general population of Italy

**Version:** 1  **Date:** 23 July 2007

**Reviewer:** Joseph T Lau

**Reviewer's report:**

**General**

**General comments:**

1. The topic is interesting and timely.
2. The sampling design is problematic and results cannot be generalized.
3. The variables selection was poorly designed and variable definitions were poorly described.
4. There are substantial problems on the statistical analyses.
5. The implications of the study is weak and not clear.
6. There is no conceptual framework and hypotheses to guide the study.
7. It is advised if there are resubmitting the paper, work closely with an epidemiologist to improve presentation and clarity (e.g. variable definitions and results).
8. I am not sure the writing is up to the standard of this Journal.

**Main compulsory revision**

1. The text implied that a communication plan for SARS exists in HK (ref8-9), which is not the case.
2. Objective 2: should specify what is meant by primary outcomes of interest.
3. The study population is actually not the general population. Instead, this was clearly the parents of public school students population. The 2 are largely different and not interchangeable. This has to be clarified and the title needs to be modified. Comparison of the demographic and SES distributions of the sample to those of the census is necessary to understand how well data could be generalized.
4. How many public/private schools are there in Naples? Is this a truly random sample of 4 schools? Why 4 schools are enough to be representative? How were public and private schools different in terms of SES and other variables? It
seems that the sample was further restricted to parents who brought children to school. Why not a random sample of all students? Who were more likely to bring students to school? How were there physically randomized? I would not describe the sample to be a 2-stage random sample. It looks like closer to the end of convenience sampling. The problems in generalisation are a major problem of the study.

5. Better to describe how the questions were phrased in the text or in footnotes of the table.

6. The section Statistical analysis is too wordy and should be more precise. Details about entry and removal can be put to footnotes of Tables.

7. Males, married people with children and housewives were over-represented in the sample. In Table 1, there was no housewives category.

8. Results: the responses would largely be dependent on the phrasing of the questions and that is why the question items must be supplied. It is also interesting to list the frequency for the don’t know category.

9. Some of the "knowledge" items were actually measuring beliefs. For instance, whether agreeing hunters are at risk (don’t know how the question was phrased) is not knowledge as the risk is a continuum and in fact, everyone are at risk. As the exact probability of risk is not known, we have no measure stickyard and these are not knowledge items. Same applies to the use of preventive measures. These are all relative and there are many scientists disagreeing with each other. The authors seem to have overstated the level of agreement within the scientific community.

10. For the logistic regression models, it is still not clear how the dependent variables were formed. The authors attempted to explain it on page 7: "In model 1, respondents were divided into those who knew the modes of transmission and the animals classified as common vehicles for avian flu versus all others". There were at least 10 questions involved and there were different combination of answers. Do it require a respondent to score "correctly" in all items? This is actually a summative scale and we are talking about higher or lower level of knowledge instead of presence/absence of it. I think the authors should sum up the scores for each item and make a cut-off point for defining higher/lower knowledge level.

11. Importantly, the frequency distributions of the recoded dependent variables used for modelling were not presented in the text. Would some categories contain very few people?

12. As stated, the conclusion that respondents did not recognize the major risk groups is problematic. Everyone is at risk to some extent. This is a risk perception measurement and you are assessing how people look at risk in a subjective way.

13. Please put LL figures to footnote and make the tables more visually friendly.
Why number of children is used as a continuous variable? The distribution and range does not support such use. Many independent variables were not clearly defined. For instance, perception of risk etc. The frequency distributions of these variables have never been presented. It is also not clear whether these variables were used as continuous or categorical variables.

14. It is better to describe some hypotheses in the Introduction. There is no conceptual framework guiding variable selection and interpretation of data. The selection of the independent variables for modeling seems to be ad hoc.

15. Is the risk perception for respondent and his/her friends or families one or several questions? If this is only one question, the validity is doubtful. The risk for different groups of people need not be consistent and using a question to measure different variables is problematic. Again, no descriptive statistics were given for this variable. In fact, the validity and reliability of the variables.

16. How was collinearity assessed? Such was mentioned in the text.

17. The last paragraph of the Results should be presented before summarizing model results.

18. Model 4: perception of risk. Is this risk for self or others, or both? If it involves others, the independent variables do not match well with the dependent variable. Rationale for variable selection therefore has to be explained. This variable was used as a continuous variable without letting readers know about its distribution and normality. If it is not good, the variable should be collapsed and logistic regression models used. Again, level of education and some independent variables were used as continuous variables in the regression model which does not seem appropriate. The SE of coefficients must be given for regression results.

19. What variables were not selected by the models?

20. Discussion: The last half of the first paragraph may be reductant.

21. Low % identifying risk group may be a matter of belief. The context of the question need to be explicit as well. The human flu epidemic has not influenced Nepal. It is natural that people think that the risk for some groups are extremely low and close to zero. The authors have to distinguish between risk perceptions and knowledge. Thailand is a different story, Asia has many cases. How would it make a difference to the prevention campaign if more people believe thatchers were at risk (higher risk)?

22. The implications of the study in terms of actual policy and education is not clear.

23. When you compared % compliance among different studies. Are the study populations comparable? If not, the discussion could be misleading. What is your interpretation of the differences among different studies?
24. The overall implications are not well described.

25. How to make sure that the respondents have not discussed his responses with his family members? If so, the regresional analyses make little sense. Response rate was not as high as it sounds.

26. The last paragraph: "greater perceived risk.." lower compliance" etc.. What groups were compared? Need to be discussed.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.