Reviewer’s report

**Title:** Avoidance Behaviors and Negative Psychological Responses in the General Population in the Initial Stage of the H1N1 Epidemic in Hong Kong

**Version:** 2  **Date:** 9 October 2009

**Reviewer:** Helene ACM Voeten

**Reviewer’s report:**

This is an interesting paper on a very current and emerging field of study. Due to the SARS experience, Hong Kong is an interesting location to study responses to newly emerging infections, and the results of this study can be compared to future studies in other locations. My biggest problem lies with the inconsistencies in using terminology and handling constructs, mostly in the tables. The discussion also needs more attention.

Major compulsory revisions:

1. The terminology used in the paper is not always consistent, which sometimes makes things unclear for readers. I would propose that you use the following standard terminology throughout the paper:
   - “Different avoidance behaviours”: when you avoid going out you also avoid different places, thus the summary term is not clear. I propose that in stead you use “show (showing/showed) any avoidance behaviour” throughout the paper (including tables) to indicate the summary measure.
   - Unconfirmed beliefs: this is not clear, preferably use “misconceptions” throughout the paper/tables.
   - Perceived clinical properties: better to always use “severity” (as you do in the abstract)
2. The way concepts are handled in the analyses/tables is not always consistent, see specific comments on each table.
3. Abstract (and later also in the text): it is very unusual to summarize various odds ratios from a multivariate analyses into a range, e.g. “(OR=1.42 to 3.90, p<.05)”. This suggests a confidence interval to the readers. I propose that you leave out these numbers in the abstract. And describe it in the text as “odds ratios ranged from … to …”.
4. The conclusions in the abstract do not flow at all from the results.
5. Summing up of Factors associated with avoiding different places (page 9): please mention the factors in the order as they appear in the table. “Those disagreeing with the statement... etc” => just call it “Those with correct knowledge”
6. Having misconceptions as well as having correct knowledge on mode of transmission predicts avoidance behaviours. This apparent contradictory finding
should be addressed in the discussion. The fact that correct knowledge predicts avoidance behaviours is not being paid attention to in the abstract.

7. Description of factors associated with visiting hospitals (page 9 below): worry for oneself/family to contract H1N1 is not mentioned.

8. Page 10, line 6 “The reverse was true for those …” An odds ratio of below 1.0 should be not handled separately, but should be included in the summing up of the fist line “The results … showed that those… and those who perceived an inability of the government to control the epidemic, were more likely than others to be much worried that either they or their family would contract H1N1”

9. Summing up of factors associated with severe emotional distress: deal with them in the same order as the table.

10. Discussion: start with repeating that 77% showed any avoidance behaviour.

11. Discussion, 2nd paragraph: the results quoted here are wrong, not consistent with the tables, please check.

12. Because the causality between avoidance behaviour and negative psychological responses is not clear (it can go in both directions as you indicate in your discussion), I propose that in table 5 you also include the summary measure for avoidance behaviour as a predictor in your analyses of negative psychological responses (just like you include neg. psych. Resp. as predictor in your analyses of avoidance behaviour).

13. Discussion, 3rd paragraph: You say it is understandable that the prevalence of avoidance behaviour decreased over time, but why did worry/distress then not also show a decrease over time?

14. Discussion, 3rd paragraph: You say it is expected that the prevalence of public negative psychological response will increase. I do not agree. Initially the case fatality of H1N1 was overestimated, not only by the general public but also by experts. Over time it became clear that it is just a mild flue, comparable to the normal seasonal flue, and therefore one would expect less fear and less negative psychological responses.

15. Page 12, upper paragraph: You say that females and the older people may be groups for primary prevention programs of H1N1. I am not sure; these are also the groups to show the correct behavioural response regarding preventive measures in the phase of the epidemic that you need people to take actions (such as hygiene behaviour, wearing a mouth cap, and even show avoidance behaviour). In that sense they are the groups that you do not need to target in the later phases!

16. Page 12 below: You say that perceptions of severity of H1N1 were not evidence-based and may be a carry-over from the SARS experience. But initially, also experts overestimated the case-fatality rate of H1N1 because suddenly people were dying in Mexico, and it was not know initially how many people were carrying the disease without getting ill/dying. In other words, the numerator was known but not the denominator, which caused the idea that this was a very severe influenza type. So in hindsight we can say it was not evidence-based, at that point in time it actually was evidence-based!
17. Page 12 last line: 2 of the 3, in stead of 4 of the 5?!
18. Page 14, 1st line: none of these remained significant; This is not true, for neg. psychological responses they remained sign.
19. Page 14, 2nd paragraph: a response rate of 74% is high!
20. Page 15: anxiety and distress are likely to be even more common: I do not agree, H1N1 is more and more regarded as a mild flu, see comment above.
21. Tables 1-3: The decimal in the percentages is not relevant/informative, I propose you round all percentages off in the table as well as the text. Additionally, in stead of mentioning the numbers (“n”) as well as the percentages, you can just give the percentages and mention the overall sample size in the titles. For example: “Table 1 Background characteristics of the respondents (n=999)”
22. In tables 2 and 3, after all constructs the summary indicator “Any of the above” should be given. And for each construct, I propose that you only include this summary measure into the logistic regression analyses of tables 4 and 5. Now for some constructs you include the summary indicator (misconceptions, knowledge, government preparedness and performance) while for other you include the individual items (perceived clinical properties, perceived susceptibility).
23. Specific comments on Table 2:
   - The (repeatedly used) three lines “Any one of above” “No” “Yes” should be replaced by one line “any of the above” followed by the outcome.
   - The sub-heading “Modes of transmission” should read “Misconceptions about modes of transmission”
   - For knowledge, before showing the summary measure “all items being correct” you should show “one item being correct” (because you use it later in the logistic regression analysis).
   - The heading “perceptions related to H1N1” is the same as the table title. I propose you replace the heading by “Risk perceptions related to H1N1”.
   - The sub-heading “Risk perception” should then read “Perceived relative susceptibility”, and I propose that you move this whole construct below the construct “Perceived susceptibility”.
   - The subheading “Perceived clinical properties of H1N1” should read “Perceived severity of H1N1”, conform terminology normally used to indicate this construct.
   - For Severity as well as Susceptibility, you should end with “any of the above”, to be consistent with how you handle other constructs.
24. Comments on Table 3:
   - The title should read: “Prevalence of avoidance behaviour and negative psychological responses”
   - The heading “Prevalence avoiding going to different places” should read “Avoidance behaviour”
- “Avoid traveling abroad” should be deleted, because it is not dealt with in the text, in the logistic regression analysis of table 4, and is not included in the summary measure (showing any avoidance behaviour). In stead, the summary measure “Any one of the above” should be given.
- The summary indicator for worry should read “Any of the above” in stead of “Respondent worrying that either himself or his family …etc”

25. Comments on table 4:
- Correct knowledge: the footnote symbol is missing
- Correct knowledge: the correct reference category should be added, namely “None” (consistent with misconceptions)
- Inadequacy of government preparation: “At least one of the two items”
- Perceived clinical properties (which should be labeled “Perceived severity”): do not mention individual items but the summary measure “None” “At least one”.
- The heading “Severe emotional distress” should read “Negative psychological responses”
- “Feeling much in panic.. etc” should be replaced by “Severe emotional distress” and the panic/depressed/disturbed should be mentioned in a footnote.
- Footnote 3 Correct Knowledge: three times the word “not” should be deleted.

26. Comments on table 5:
- the words “indicating misconception/inadequacy/confidence” should be deleted.
- Inadequacy of government preparation: “At least one of the two items”
- Perceived clinical properties (which should be labeled “Perceived severity”) and perceived susceptibility: do not mention individual items but the summary measure “None” “At least one”.
- Add the construct “Avoidance behaviour” “None” “At least 1 item”

Minor essential revisions:
1. Results, Evaluation of governmental preparedness etc: Discuss it in the same order as in the table, i.e. :“The majority (92%) …” should be switched till after the sentence “Around 30-40%…”
2. There are a lot of English grammar mistakes:
3. Last paragraph of Introduction, first line: “population in Hong Kong was”
4. Last paragraph of Introduction, 4th line: “much worried about contracting H1N1 and their level of emotional distress (feeling much in panic, depressed or emotionally disturbed)”
5. Last paragraph of Introduction, second last line “this report covers”
6. Page 11 line 4: “potentially damages the economy and disrupts”
7. Page 11 line 8: may cause people to avoid
8. Page 13, 2nd line: one of the theory’s constructs. Next line: remains low
9. Page 14, in the middle: The study was however anonymous.
10. Conclusion 1st line: this study documented that

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

**Declaration of competing interests:**

I declare that I have no competing interests.