Author's response to reviews

Title: Willingness to accept H1N1 pandemic influenza vaccine: A cross-sectional study of Hong Kong community nurses

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Author's response to reviews: see over
Dear editor,

On behalf of the first author and other co-authors, I am submitting an original research article “Willingness to accept H1N1 Pandemic Influenza Vaccine: A Cross-sectional Study of Hong Kong Community Nurses” for your re-consideration for possible publication in BMC Infection Diseases.

This is a first study to explore community nurses’ attitude towards their willingness to accept H1N1 vaccine and its reasons during influenza pandemic. The findings provide important and unique information to policy makers and healthcare manager especially for those who participate in the provision of community care services with regard to the infection control during an influenza pandemic.

We thought that the paper deserved to be published in BMC Infection Diseases as it is a first attempt to thoroughly explore the community nurses’ attitudes towards their willingness to accept vaccine during H1N1 influenza pandemic. We believe it will provide important information for health professionals, researchers and educators. Thank you very much for your kind consideration and looking forward to your comments.

Yours sincerely,

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Reviewer’s Comments and Responses

Reviewer 1’s Comments and Responses

1) Abstract, Conclusions: Further research is needed-please make a suggestion about what this future research would aim to do. This statement alone is vague and the authors should have some ideas based on their research about where the problem lie, what factors future research might examine and what sort of study design might be needed (see comments related to this in other sections below). Many studies have shown poor HCW willingness to accept influenza vaccine- the authors need to try and take it to the next step.

R1: We have revised the Abstract, Conclusions and suggested that a qualitative study that explores factors on willingness to accept vaccine at time of a pandemic is called for in the future.

2) To provide greater context for why this study was conducted, and what it will add to the current literature, please could the authors make a comment on whether any previous studies in Hong Kong have examined willingness of community based nursing or medical staff to accept influenza vaccine. The authors only discuss two studies of their own related to hospital based staff.

R2: We have searched the literature using “vaccine acceptability” and “Hong Kong”. Of the studies came out on our search on pubmed, only few studies on influenza acceptability were found. These included two studies with low response rate that were added in the introduction section. We have also re-emphasized that there is a lack of studies in this area and that this is the first study that examined vaccine acceptability in nurses who work in the community in Hong Kong.

3) Statistical analysis. Please explain how multiple logistic regressions analysis was conducted and on what basis variables were retained or rejected, and how the final model was determined.

R3: Variables we used in the multiple logistic regressions analysis were pre-defined factors that we think might be associated with the acceptance of influenza A (H1N1) vaccine when constructing the questionnaire. We then conducted the forced entry logistic regression analysis using these variables and the result is shown in Table 3 in manuscript. To confirm the result, we have also conducted backward logistic regression and the result also indicated that having seasonal vaccination in the past 12 months was significantly associated with the willingness to accept influenza A (H1N1) vaccination (OR=3.56, 95% CI:1.87-6.80, p<0.001).

4) Discussion, para3. As for point 1, above. “The barriers to pandemic influenza vaccination should be identified by specifically designed studies”.

“Serving the community through quality education, caring practice, and advancement of health sciences.”
Please elaborate—what design, what factors need to be further explored. Etc.

**R4:** Information has been added and suggestion for conducting intervention studies has been added with additional references included.

5) Discussion. The discussion in general needs more critical interpretation, not just repetition of the results. There is not a lot of direction to future researchers about what the key elements of future studies might look at, what possible solutions there might be etc etc. Mostly contains statement of what they and others have already found.

**R5:** Direction for future research (intervention studies) has been added in the discussion.

6) Strengths and weaknesses of the study. First sentence: I don’t agree that “our results provide timely information for policy makers to consider measures to improve vaccination uptake in this group”. This is certainly not a strength of the study. The authors did not examine factors for improving uptake, nor do they comment on these. They make comments about “future research: being needed.

**R6:** The statement, “our results provide timely information for policy makers…..in this group” was deleted.

7) Strengths and weaknesses. Can the authors explain how recall bias might affect their results?

**R7:** A sentence that explains potential the effects of recall bias “on vaccination in the previous year” has been added.

**Minor essential revisions.**

1. Participants: brackets in the wrong place. Should be: “the rest of CNS nurses (around 100 of them) provide psychiatric services in the community”

**R1:** This was revised accordingly.

2. Study design, para 2, there is an asterix after CNS centres-sentence 1. It is unclear what this refers to

**R2:** The asterix was deleted.

3. to better understand the survey response rate, please indicate how follow up was conducted with the 12 CNS centres in order to encourage completion of questionnaires

**R3:** Below paragraph has been added to the manuscript.

“In total, 401 self administered, anonymous questionnaires were posted to general managers of centres who then passed these questionnaires to the community nurses in their centers. The general managers of centres were then reminded via telephone during the period from 2nd July and 8th July one
week after the questionnaires were sent out and advised to return the completed questionnaires within the week. Once completed, questionnaires were collected and returned by their supervisors, except for one of the (Sau Mau Ping) sub-offices, where nurses mailed back their questionnaires individually. All centres sent their questionnaires back after one telephone reminder. The last pile of completed questionnaires was received on 14th July, 2009."

4. survey design, para 1. It would be helpful to have a statement that the full questionnaire can be accessed by contact the authors—or having an appendix or table with an abbreviated version of the questionnaire +/-key questions covered.

R4: A statement suggested by the reviewers has been added.

5. P7 results, demographics. Table 1 should be first referred to in the first two paragraphs.

R5: Table 1 has be referred to.

6. Reference 15 needs fixing-journal mis-abbreviation

R6: Reference 15 has been fixed.

**Discretionary revisions**

1. Suggest “decline vaccine” rather than “Refuse vaccine” throughout this manuscript since interviewees are being asked whether they would theoretically accept a vaccine or not

R1: We have not used refuse vaccine in this document.

2. suggest removing decimal points for reporting percentages.

R2: Decimal points were removed as suggested.
Reviewer 2’s Comments and Responses

1) “Some independent variables are likely to be highly correlated….I strongly suggest that the authors redo the multiple regression analysis after either: a) selecting one variable for age-related variable with use of an additive score for protective behaviors; or b) use some variable selection method, although the lowest number of respondents will be used for analysis”

R1: We have re-conducted the multiple logistic regressions as suggested and the result is shown in Table 3 in the manuscript. We have also conducted backward logistic regression analysis. The result also indicated that having seasonal vaccination in the past 12 months was significantly associated with the willingness to accept influenza A (H1N1) vaccination (OR=3.56, 95% CI:1.87-6.80, p<0.001)

2) Page 7, “all questionnaires were received within a 2-week period at a time when there was widespread H1N1 in the community”. More details should be provided on the phasing of the study and the epidemics in Hong Kong, at best by use of possible information recorded from respondents such as a recent episode of influenza-like illness. Quite logically, a potential limitation of the study is that nurses having had a recent episode of influenza-like illness should be much less willing to get vaccinated.

R2: The pandemic started on 1st May, 2009 in Hong Kong, when a Mexican traveler was confirmed with influenza A (H1N1). Till the end of our data collection on 14th July, 2009, there were 1389 confirmed cases and no death was reported. We have not recorded whether nurses have had a recent episode of influenza-like illness and this is listed as a limitation.

Minor Essential Revisions:
1. Abstract: the survey period should be mentioned (06/24/2009 to 06/30/2009). Acceptance of A (H1N1) pandemic vaccination was assessed instead of “pre-pandemic vaccination’.

R1: This has been revised as suggested.

2. Page 3 “previous studies have examined the acceptability of ……in this group”. I would rather mention reports of acceptability of ….Schwarzinger Vaccine 2010 in the community.

R2: All the suggested references have been added and both acceptability of seasonal and A (H1N1) have been mentioned

3. Page 3 “although it is essential for all healthcare workers to be immunized against influenza A(H1N1) to bring herd immunity to the level which will enable the healthcare work force to handle the expected increase in patient load: the use of “herd immunity” seems inappropriate in this setting…..for

“Serving the community through quality education, caring practice, and advancement of health sciences.”
unvaccinated people"

**R3:** The information on herd immunity was deleted as suggested.

4. Page 4 “In two recent repeated cross-sectional studies conducted in public hospitals in Hong Kong, we showed…” the authors could advantageously provide actual estimates and 95CI of the willingness of hospital nurses to accept either H5N1 or H1N1 pandemic vaccines.

**R4:** The actual estimates of studies in Hong Kong, Greece and Italy were added as suggested by the reviewers.

5. Page 8: an additional table providing all main reasons for refusal of pandemic vaccination would be useful.

**R5:** The table providing main reasons for declining of pandemic vaccination is added as Table 2 in manuscript.

**Table 1. Reasons for declining influenza A (H1N1) vaccine**

<table>
<thead>
<tr>
<th>Reasons</th>
<th>N of nurses declining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness</td>
<td>105 (59%)</td>
</tr>
<tr>
<td>Side-effects</td>
<td>149 (83%)</td>
</tr>
<tr>
<td>Production Site</td>
<td>49 (27%)</td>
</tr>
<tr>
<td>Other concerns (i.e. pregnancy, poor health status, and the severity of the epidemic of H1N1)</td>
<td>10 (&lt;1%)</td>
</tr>
</tbody>
</table>

Note: The total percentage exceeds 100% because multiple responses were allowed.

6. Overall comment on Discussion: given the timing of submission/publication as compared to the survey period, the authors could avoid arguments such as “there is still a considerable proportion of nurses who are unwilling to take pandemic vaccination”. It would be of interest to provide official figures on the actual proportion of HCWs vaccinated in Hong Kong if available.

**R6:** Arguments quoted have been deleted as suggested. At the time of revision, there is still no published official figure on the actual proportion of HCWs vaccinated in Hong Kong.

7. Page 11, first paragraph about seasonal vaccination in general population: I suggest deleting the paragraph given …..among HCWs.

**R7:** This paragraph was deleted as suggested.

8. Page 12, “response rate higher than similar reports”. Please specify

**R8:** The response rate was given for a similar report from Hong Kong.

9. Table: add a column with the total per category and distribution.

**R9:** The column is added.

Discretionary Revisions:

“Serving the community through quality education, caring practice, and advancement of health sciences.”
1. Page 3, Ref [4-7]: Ref 4 and 7 would be sufficient.
   
   R: We have revised accordingly.
Reviewer 3’s Comments and Responses

1) Overall, it is a clearly written paper…..authors should be consistent with the name of influenza as in different parts of the text it is called A (H1N1) influenza, A influenza, influenza A or H1N1 influenza etc.

R1: We have revised accordingly and consistently used influenza A (H1N1) as the name of the influenza.

2) Methods: Participants should be described more detailed in a “participants” section, for example, mentioning the number of participants, the response rate etc., there, afterwards omitting this information in “Study design” section or “Demographics”. In statistical analysis, the chosen level of significance could be mentioned.

R2: More detailed information on participants together with the response rate has been put in the participants section. In the statistical analysis, the chosen level of significance was added as suggested.

3) Although the paper speaks about the willingness of accepting the vaccine, the “Study design” part is ended with mentioning “results on vaccine acceptability are reported in this paper,” which is not completely true.

R3: This has been revised and only willingness of accepting vaccine is used.

4) When reporting results, the authors should decide whether to report the p values or the confidence intervals, the latter is preferable. Unless there would be an argument for the choice to report both. The reader should be referred to look at Table 2 in the text of a “result” section.

R4: We have revised and only confidence intervals are reported. Table 2 is referred in the revised manuscript.

5) Authors should give a reference in the first part of a second paragraph in the discussion.

R5: 4 references have been added in this part.

6) Additionally, in this paper no variables indicating “fear of side effects or concern” or “efficacy of the new vaccine” were included.

R6: A table summaries reasons why participants declining for pandemic vaccination is added in manuscript as Table 2.

7) Authors should make it clear for the reader the evidence they mention and provide references at the very end of the discussion and the beginning of the conclusions.

R7: More references have been added as suggested.

“Serving the community through quality education, caring practice, and advancement of health sciences.”
8) Finally, how can we use this information to improve the vaccination programs? It might be worth spending some words on how the investigators think the determinants can be used to change behavior.

R8: Additional discussions with references have been added to look into barriers for nurses to accept vaccination. Future intervention studies are suggested.