Author's response to reviews

Title: Knowledge, Attitudes and Practices towards Pandemic Influenza among Cases, Close Contacts, and Healthcare Workers in Tropical Singapore: A Cross-sectional Survey

Authors:

Jonathan Yap (jonyap@yahoo.com)
Vernon J Lee (vernonlim@hotmail.com)
Teng Yan Yau (so2_healthcare@starnet.gov.sg)
Tze Pin Ng (Tze_pin_ng@nuhs.edu.sg)
Phern Chern Tor (torphernchern@gmail.com)

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

We wish to express our appreciation to the editor and reviewers for the invaluable comments and edits to our manuscript. We have addressed the comments in the manuscript, and have included a point-by-point reply to each of the comments below.

Comments from Reviewer 1

1. The aims of study were to determine the differences in knowledge, attitudes and practices in various different cohorts and explore the pertinent factors that influenced behavior in tropical Singapore. However, due to significant limitations, it is unclear of whole picture of the report. Actually, this is an article of limited interest

While we agree with the reviewer that there are some limitations of this study which we have indicated in the discussion, we respectfully disagree that this article is of limited interest.

Firstly, while there are many articles exploring the behaviors of different populations towards pandemic influenza, to the best of our knowledge there are none that explore the comparative differences among healthcare workers, patients, and close contacts. These are important groups to consider due to the focus and impact on these groups during transmission of influenza and other directly transmissible diseases.

While our study is performed in a military setting, the groups within our cohort are similar and representative of the Singapore population at the specific young adult age structure. This also makes comparisons across the groups less influenced by demographic characteristics.

We believe that the findings of our study will interest public health and infectious diseases professionals, which is why we have submitted this to your journal.

2. We do not know if the questionnaire is validated. It would have been helpful to present in an appendix the questionnaire or at least examples of questions.

The questionnaire was based on the structure of other questionnaires on this topic. The questionnaire was pilot tested among military servicemen with similar profiles to the actual cohort before being used. We have currently presented a summary of the questions in the questionnaire in the manuscript.

3. In discussion, some more discussion is necessary including more limitations of the study.

We have discussed the limitations of our study in greater depth and addressed each limitation individually. The main limitations we have discussed include the possible lack of representativeness of a military cohort to the general Singapore population, the timing of the questionnaire, the relatively low response rate and the limitations of a cross-sectional study.

We have also discussed the association between education level and practice in greater depth as recommended by the second reviewer.
4. Gender is not the same as sex:  
http://www.who.int/gender/whatisgender/en/index.html (Should be changed in tables)  
We acknowledge the reviewer's comment and have made the necessary changes in the text and tables.

Comments from Reviewer 2

1. Abstract
- Methods: I would mention the mean / median age of the sample.

We acknowledge the reviewer's comment and have added the mean age of the sample in the abstract.

2. Methods
- why was the survey carried out in the military? The individuals involved do not represent the general population.

This was a study done in a military setting as the military had detailed records of cases, close contacts and healthcare workers that were of the same demographic make-up. This allows us to compare across the various groups to determine important differences in behaviors.

We have acknowledged in the limitations the possible lack of representativeness of a military cohort to the general population, especially for the overall age structure of Singapore. However, the study does represent the behaviors of an important age group for the 2009 influenza pandemic, which affects mostly children and young adults.

3. You involved about 3,000 persons in your survey. It would be interesting to know, how many people are on average involved in the military service. In other words, it would be worth to mention whether your sample represents a big/ small proportion of all persons involved in the military service in Singapore.

The Singapore military has about 50 to 60 thousand people in total, so the sample represents about 5% of the military population.

We had calculated the sample size by assuming that responses within each group were normally distributed with standard deviation of 5%. To detect a true difference in means between groups of 2%, we will need 132 participants per group to achieve power of 0.9 and p=0.05. As we had anticipated a much smaller group of infected cases and close contact (limited by the total number of these people that we could identify), we increased the number of general servicemen mailed to act as comparison groups.

We have added this to the methods and discussion.

4. page 7: how were (apart from the cases) the servicemen and health care workers selected being contacted? Were they randomly selected?

All cases, their contacts and all healthcare workers in the military were selected for this study. General servicemen were selected from various representative units in the military, who were available at the time of the study, resulting in 1,021 individuals in total, representing the various units in the military. An anonymous self-administered
paper questionnaire was mailed to the respective servicemen with a self addressed envelope included for return of the survey forms. We have reflected this in the manuscript.

5. Table 1.
- I would prefer to have a table with the original questions instead of mentioning the topics discussed.

We acknowledge the reviewer's comment and have presented a summary of the questions in the questionnaire in the manuscript.

6. Table 4
- I would recommend to mark/mention the reference group with a footnote

We acknowledge the reviewer's comment and have done so.

7. Discussion
- Page 13: higher educational level is mentioned to be a negative predictor of good practice. This reflects also knowledge from European and US studies, showing that higher education is associated with lower vaccine uptake. Probably, it would be worth to mention this.

We have done a literature review and with regards to influenza vaccine uptake and education level, most studies show varying results. Some studies have showed that a higher education level resulted in higher influenza vaccination uptake [1, 2]. Another study on influenza vaccination uptake in 11 european countries showed varying influence of education levels on influenza vaccination (eg. In Austria and Poland, immunized persons were on average higher educated, while in Ireland, Italy and Spain higher levels of education were associated with reduced vaccination uptake) [3]. We have included these in the discussion. We have also found literature discussing the association between education level and behavioural change in general during the SARS and influenza pandemic and have included it in the manuscript.

8. Methods
- Page 9: I assume that the associations given in the manuscript (‘R’) are odds ratios? Please mention in the methods, how you have assessed these associations (odds ratios, relative risk, ...).
- If you are talking about odds ratios, the word ‘association’ would be more accurate than using ‘correlations’.

The ‘r’ in the manuscript refers to the correlation co-efficient using the Pearson’s correlation and not the odds ratio. Therefore it is relevant to mention correlation and not mere association.

P.S. it should be ‘r’ instead of ‘R’ and we have made the relevant changes.

9. Results
- Page 9: what could be the reason of the low response rate of HCWs?

We have noticed this as well and while we do not want to speculate on the possible reasons, this is in itself may be a behavioural issue that could be pertinent to HCWs. We
have mentioned this in the discussion that it may reflect the possible disregard HCWs have for healthcare-related questionnaires.

- Page 11/12: there is lots of information in the results, and somehow the reader gets overwhelmed by all the numbers and associations mentioned. I would recommend referencing the according table.

We acknowledge the reviewer’s concerns and have reduced the numbers and associations to those which are relevant for the overall understanding of the paper.

10. Table 4
- Please give a footnote, what ‘B’ references to. There may be readers, which are not aware of it.

‘β’ (not ‘B’, apologies for the typo), stands for Beta (standardized). It is as regression coefficient that describes the relationship between two variables. If the regression coefficient is positive, then there is a positive relationship between the two variables. If this value is negative, then there is a negative relationship between the two variables. If the beta = .35, for example, then that would mean that for one unit increase in Variable A, Variable B would increase by .35 units.

Comments from Editor
1. Please also include a copy of the questionnaire used as an additional file, and provide the name of the ethics committee that gave ethical approval for your study.

We have included the questions used in the questionnaire in a table in the manuscript for greater clarity. The study was approved by the Singapore Armed Forces Research and Development Management Meeting (RDMM) committee.

We wish to thank the editors and reviewers for your kind consideration, and hope to hear favorably from you soon.

Regards,
Dr Jonathan Yap
On behalf of the authors

References