Reviewer's report

Title: Factors associated with 2009 pandemic influenza A (H1N1) vaccination acceptance among university students from India during the post-pandemic phase

Version: 1 Date: 28 April 2011

Reviewer: Baruch Velan

Reviewer's report:

This study examines attitude and acceptance of H1N1 vaccination among university students from India during the post pandemic-phase. This study address a question of high relevance to vaccination and prevention of infectious diseases: the acceptance crisis related to vaccination related to H1N1 flu. In this aspect the study complements a rather vast body of studies conducted in different parts of the world. Nevertheless this study is one of first studies on behavior during the post pandemic period and this underscores its relevance. The study was well designed and the queries are relevant and interesting. The interpretation and analysis of the data on the other hand is somewhat disappointing and require improvement.

Specific comments:

1) Information about H1N1 vaccination in India (Minor Essential Revisions):
Authors are encouraged to provide in the introduction pertinent information about H1N1 vaccination in India during the pandemics and after the pandemic, as well as information about vaccine acceptance in India. More especially authors should provide information about the flu vaccination program offered to the survey group by the University. Was H1N1 vaccine offered as a mono-valent vaccine or as a constituent of the seasonal flu vaccine cocktail? This may have an effect of the attitude of the students towards vaccination.

2) The choice of students as a survey group (Major Compulsory Revisions):
Students are frequently used in attitude and behavioral studies, yet one cannot escape the feeling that this is often related to the convenience of using a sample group available in the backyard of the investigators. The relevance of using students in the present study is not justified properly. The linkage made by the authors between healthcare workers and students (page 1, last paragraph) in their responsibilities towards vaccination is inappropriate. The risks of contagion and spreading infection by HCW are not comparable to those by students. The same can be also said about the responsibilities of these two groups carry toward the community. The definition of students as group at high-risk for H1N1 infection are not really substantiated. The authors should avoid statements such as "students in educational institutes are the most important target population to implement vaccination programmes to avoid serious outbreaks."
Instead of all this, the authors should make an attempt to provide meaningful justifications for using students (for example: targeting a highly-educated and open-minded population, targeting a population that is expected to shape public opinion, etc)

3) Gender specific behavior (Minor Essential Revisions):
Authors should provide information about the response rate to the survey among males and females. In addition, the presentation of date is somewhat misleading. The fact that 63.7% of vaccinees were females is less important than the fact that vaccination rate among males was 7% and among females 21%. Moreover, careful examination of the data presented in Table 1 indicates that difference in vaccine denials between genders is not striking (79% in males and 71% in females). Interestingly there is a gender specific difference in the ratio of those vaccinated to those planning to be vaccinated. I believe that better analysis of all his information would enrich the ms.

4) Analysis of unwillingness (Major Compulsory Revisions):
The authors state that that the unwillingness to be vaccinated was examined by direct open-ended questions, yet only 5 variations on the answers given (Table 2). This appears to be puzzling. The authors should provide more information about the reduction/unification process involved in this analysis.

5) Attitude and knowledge (Major Compulsory Revisions):
The conjunction of knowledge and attitude questions (Page 6, third paragraph and Table 4) is confusing and could be misleading: The first three questions in Table 4 relate to knowledge about well established facts. The next three questions as well as the last question represent questions to which the answers are not conclusive, the answer here would reflect knowledge as well as interpretation of knowledge (e.g question 4: Knowing that high risk individuals would highly benefit from H1N1 vaccination does not mean that the respondent believe that influenza vaccine should only be given to this group). Question 7 and 8 do not examine knowledge but perception of knowledge. The authors should make these distinctions clear and present and analyze the data accordingly.

6) The relevance of the observation (Major Compulsory Revisions):
The relevance of this study in the general context of H1N1 deserves better evaluation. In order to put this study in the right context one should discuss aspects such as: the relevance of this study to attitudes post or during the pandemia, attitudes of students versus that of general public. Effects of cultural determinants on attitudes in different countries. The interrelationship between knowledge and behavior.

7) Interrelationship between knowledge and attitude: In the introduction, the authors rightfully emphesize that gaining knowledge about the H1N1 vaccine should transpires in action of acceptance during the post pandemic. Unfortunately, this is not being addressed properly in the study. It would be interesting to examine the possible correlation between knowledge manifested by
subgroups of respondents their actual behavior.

8) Discussion (Major Compulsory Revisions):
Discussion should be more focused and address more specifically the relevance of the study pointed out in the above comments.

9) Conclusions (Major Compulsory Revisions):
The authors should be more careful in stating their conclusions:
a) There is no evidence to indicate that "unless the safety and effectiveness of the H1N1 vaccine is informed..........the negative attitude and non-compliance towards H1N1 vaccination will continue". This appears to be a wishful speculation.
b) There is not enough information to claim that "the negative attitude to vaccination is similar among students in different parts of the world in both pandemic and post-pandemic". Even if this is true, it does not necessarily indicate that international guidelines are required

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

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