Reviewer’s report

Title: Perceived risk, anxiety, and behavioural responses of the general public during the early phase of the Influenza A (H1N1) pandemic in the Netherlands: results of 3 consecutive online surveys.

Version: 2 Date: 2 November 2010

Reviewer: Mary-Louise McLaws

Reviewer’s report:

Thank you for making your improvements to your interesting manuscript I have only 4 issue yet to be resolved after your excellent revisions (and 1 small new one):

1. Reviewer original Q. Has there been any test retest reliability of the 1-5 scale?
   Author’s Response. We did not do a test-retest study of the questionnaire used in our study. This was not possible, because the Influenza pandemic was ongoing. During a real pandemic, with increasing threat and media attention, one will never get consistent answers on different time points because the perceptions and behavioural responses are changing as a result of the ongoing pandemic. We however performed a test-retest study with a comparable questionnaire, dealing with risk perception and behavioral responses in a hypothetical scenario of an outbreak of Bordetella pertussis in a day care center or primary school. Two consecutive measures were held amongst parents of 0-12 year olds, 2-3 weeks apart from each other. The test-retest reliability of 55 items (on a 1-5 scale) was measured. Of these items 13% had a weak correlation (0.3-0.5), 75% an intermediate (0.5-0.7) and 11% a strong correlation (>0.7). This overall ‘intermediate’ correlation may be related to the fact that parents may have no clear view of pertussis, because they are unfamiliar with the disease.

   Thus, these results are not so relevant for the current study and we do not mention them in our paper.

   Reviewer request. Test-retest of behavioural scales is important given the scale is limited (1-5) and a change from 5 to 4 may have a greater influence that a
change from 15 to 14 on a scale of 1-15 and that human’s response to items relating to attitudes, perceptions etc may not be stable. Given you have already undertaken the survey in a pandemic situation please make note of the lack of test-retest as a potential limitation in your Discussion.

2. Reviewer original Q. Mention the number of steps from the first to the final model.

Author’s Response. To clarify our multivariate analysis procedure, we now explain that: ‘For the multivariate regression analysis, all factors with a p-value<0.1 in the univariate analysis were entered in the multivariate model, and taken out one-by-one (starting with the most insignificant one etc.) until only statistically significant predictors (p<0.05) remained.’ With this description we implicitly indicate the number of steps in the procedure. Adding the exact number of steps is not informative.

Reviewer request. You have used a backward deletion model. Like the other two alternatives (forward and stepwise) there are controversies with this approach. A model should improve over the null model and giving the number of steps to identify the final model the readers can consider: the incremental improvement from initial model to final model; downward bias in the p-values and SE of the final step. The readers should be given sufficient information to evaluate the final model and usually includes statistical test of individual predictors (including SE and p-values), a goodness of fit statistic and validity of the predicted probabilities. Please replace “taken out” with ‘removed’.

3. Reviewer original Q. The development of several composite scales is usual practice and Table 2 explains each item for each construct. However, once you make a decision to use a composite scale an examination of the individual items (as in Table 2) undervalues the construct. I would move Table 2 to an appendix with the Cronbach alpha for survey 1 and remove all analysis between the survey periods.

Author’s Response. The first objective of this study was to identify trends over time in risk perception, feelings of anxiety, and behavioural responses. Because we did 3 surveys, we were able to analyze trends over time. These time trends make clear how people react over a period with changing risk and publicity. This provides useful and interesting information, for example for local and national health institutes. The composite scales are calculated by adding up the individual items and dichotomize the outcome on the median. This was done to get a (close to) 50%-50% distribution, which would give most power in the logistic regression analysis. These composite scales are not mean scores, and therefore cannot to be interpreted in an absolute sense; they only make sense in the comparisons over time. The individual items are of great value because they can be interpreted in an absolute sense, and give useful information at one time point.
For example, as we look at the intention to take preventive measures we can see that the intention to get vaccinated against the Influenza A (H1N1) at a certain moment is 77% whereas the intention to stay home is 57%.

Reviewer request. Behaviours (such as intention to comply with advise) are complex requiring theoretical framework to predict which independent variable(s) are most significant in intention to comply. A central tenet to applying a theoretical framework is the premise that individuals behave (e.g. intend) after a complex inter relationship between components of the model has occurred. Presenting individual items (Table 2) ignores this underlying tent and assumes each independent variable is important in isolation. Yet, we know variables (composite scores) will fall out of the model because these are not significant influences on intention in the presence of others. A such, Table 2 provides no insight into complex cognition unlike a presentation in a table of the 3 models for intention for each period (with Beta, SE, p-values).

4. Reviewer original Q. With sample sizes relatively large and so I am surprised all constructs of a 1-5 scale were recoded into a dichotomous scale. Have you attempted a multiple linear regression entering the independent constructs as 1-5 scales (sum all items and divided by total number of items to get the scale back to 1-5) with the dependent variable on 1-5 scale. Then present the range, median and interquartile range for each in a new Table 2. Use the interquartile range to standardise the beta coefficients (IQR*beta coefficient prior to exponentiation) of each of the significant predictors in the two models. This way you can compare the effects of each construct on the dependent variable because each construct is now standardised.

Reviewer request. Looking at the authors’ response I believe they have missed my point. When you provide your Multiple Logistic Regression in a table form your odds ratios will be crude odds ratios and each estimate of effect will not have been adjusted for the interquartile range. Hence the odds ratios for each significant predictor cannot be compared until you multiple the beta by the IQR before you exponentiate – this way the readers can compare the odds for “believing in the efficacy of measures” with “self-efficacy” etc.

5. Please note:
   1) older age (30-49yrs: OR 1.77, 95%CI 0.94-3.35) includes unity and as such is not significant, remove it from results.
   2) include p-values for each.

Level of interest: An article of importance in its field

Quality of written English: Acceptable
Statistical review: Yes, and I have assessed the statistics in my report.

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