Author's response to reviews

Title: Mistrust Surrounding Vaccination Recommendations by the Japanese Government: Results from a National Survey of Working-Age Individuals

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Author's response to reviews: see over
Submission of the revised manuscript (MS: 2102988750153627)

Dr. Natalie Pafitis

Executive Editor

*BMC Public Health*

Dear Dr. Pafitis,

We would like to submit our revised manuscript entitled: ‘Mistrust Surrounding Vaccination Recommendations by the Japanese Government: Results from a National Survey of Working-Age Individuals’ (MS: 2102988750153627) for publication as a research article. We thank the editors and reviewers for providing useful suggestions. We have addressed all their comments in our revised manuscript.

We declare that the manuscript has not been considered for publication elsewhere. We also declare that we have no conflicts of interest. We hereby approve the submission of this manuscript for publication in *BMC Public Health* and trust that our revised version meets with your favourable consideration.

Sincerely yours,

Authors
Reviewer #1:

1. Page 8, Line 120-127, Table 1. One of the major limitations of this study is that selection bias of the study participants. They were registered in an online survey, and they were selected from 7,087 individuals who were initially contacted. In addition, it is odd to this reviewer to have almost equal numbers of study participants in each age range. What was the selection process?

We have revised our description of the data collection method for our study more carefully in the Methods and the potential limitation of selection bias as follows in Discussion section: “First, the population studied was recruited through an online survey company and therefore, owned a computer and was able to use the internet. Such a population may not be representative of all Japanese people.”

With regard to equal sample size by age group and gender, we described as follows in Methods: “Participants were classified into five age groups (20-29, 30-39, 40-49, 50-59, and 60-69 years), and by gender. Sample size was calculated based on the expected percentage who would mistrust the Japanese government’s policy on vaccination (30%), with an expected precision of ± 5%. The required sample size was calculated at 264 individuals for each age category and gender. Thus we aimed to recruit 300 individuals for each age group and gender.”

2. Page 10, Line 154-157. The definitions of their health and smoking status are vague and subjective. The authors need to define more detailed definitions to understand better about their health and smoking status.

We appreciate these comments, however, based on our study design (and to encourage maximum participation rates) it was only possible to obtain subjective information on these two factors. In the limitation section of the manuscript, we have now added the following sentence: “Finally, it should also be noted that some of the health-related information was subjective in nature.”
3. Page 10, Line 162 – 165; Table 3. Multivariate analyses should include the factors which are statistically significant in univariate analyses or are known to be important in the previous studies. In this study, all factors are included in the multivariate analyses, which need to be reanalyzed.

As suggested, in this analysis we only included variables which had been shown to be statistically significant during univariate analyses and are known to be important in previous studies. Some factors in each question were shown not to be statistically significant during univariate analysis but were still necessary to complete analysis. Please refer to a revised Table 3.

4. Page 18, Line 311 - Page 19, Line 318. The discussion of smoking individuals is poor. What are more effective interventions? Authors should discuss further what the strategies are to provide appropriate information in the high-risk population.

We appreciate the reviewer's comments and have made some revisions to the manuscript based on this. In the current study, although we sought to identify those with a high risk of mistrust for the government policy on vaccination, we still do not know the most effective interventions for this population. Therefore, further research still needs to be done for this issue. We described this as follows: “As such, more effective interventions to help smokers obtain vaccinations should be addressed during vaccination campaigns; especially in those such as pandemic flu, where smokers can be at a higher risk for developing complications. The workplace is known to offer important opportunities for public health interventions, including tobacco control; and given that the population in the current study consisted of working-age persons, may offer an ideal way forwards in this regard.”

5. Table 2. Authors should describe the data in all study participants. What is the reason to analyze the data dividing between male and female? What was the hypothesis? Nothing was described why they analysed the data divided in gender.

We added the following sentence for explaining why we analyzed by gender in the Methods section: “We hypothesized that gender in working generation is a
factor which can make differences in the studied variables such as in the most trusted information sources, thus we analyzed by gender.”

Minor revisions

6. Page 6, Line 82. “Human Papilloma Virus” should read “Human papilloma virus”.
   Page 19, line 331 – Page 20, Line 346. Firstly, Secondly, Thirdly should read First, Second, Third.

We have revised the text accordingly.

7. Discretionary Revisions

   Introduction is too long and wordy. Authors need to summarize why this study was conducted.

Although we appreciate the reviewer’s comments and value their opinion, we still believe that three paragraphs are necessary given that the topic is complicated and the rationale for our research is lengthy.

Reviewer #2

8. Table1
This reviewer suggest to change the title of the table in “Characteristics of the participants”. In the table you described not only the demographic but also the social characteristics, the life-styles, and the individual attitude to vaccination. I suggest to add also information about the educational level because this is a table descriptive of the enrolled population and the educational level is one of the characteristic you have considered for the analysis.

We have revised the title of the Table accordingly and have also added some basic information regarding the level of education completed in Table 1.
The new title is: “Mistrust of the Government’s Vaccination Recommendations and demographic variables in the working-age population of Japan”

9. Table 2
In my opinion the title is not complete. The table considers also the socio-demographic variables and aspects of life-style. There are some mistakes in the numbers. Line corresponding to “Health care workers”: the total is not 1386 (number of Participants who trusted in health care workers as information source on vaccination, see table 1).
Line corresponding to “None of above”: the total is not 774 (number of participants who do not trust in any of the categories considered as a source of information on vaccination, see table 1).
Smoking status: I suppose that numbers considered are reversed in the lines refer to the categories “Ex-smoker” and “Never smoked”. Please look at the total.

The title of Table 2 has been changed as follows: “Association of Mistrust Regarding Government Vaccination Recommendation and the studied variables in Japan (N=3140)”

We have now corrected some of the numbers the Table 1 that were incorrect, as pointed out by the reviewer. Thank you.

Regarding smoking status, considering Table 3, we have now included information on smoking status (never smoked, ex-smoker, and current smoker) as a risk gradient.