Author's response to reviews

Title: Wearing Face Masks in Public During the Influenza Season May Reflect Other Positive Hygiene Practices in Japan

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Author's response to reviews: see over
Submission of the revised manuscript (MS 8746801468231284)

Dr. Francoise Dubois-Arber
BMC Public Health

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Dear Dr. Dubois-Arber

We would like to submit the revised manuscript "Wearing Face Masks in Public During the Influenza Season May Reflect Other Positive Hygiene Practices in Japan" for publication as a Research Article in the BMC Public Health.

We have made substantial revisions to the manuscript in accordance with the reviewers' suggestions. All authors hereby approve the revised manuscript and declare that it has not been considered for publication elsewhere. We declare that we have no conflict of interest.

We trust that our revised manuscript meets with your favorable consideration.

Sincerely yours,

Koji Wada
Response to Reviewers

Consulting Editor: 1

Comments to the Author

How did the web survey company select the 3000 recruits - and did they do anything to eliminate bias- or even offer incentives? Also the authors need to explain how they ended up with 3129 participants -were there some people who chose not to participate? and what response rate did they have. From this data can they say anything about non responders? - and it would also be useful to know whether the respondents were 'typical' of the Japanese population or a specific subset. The proportions in different age groups are similar - but is this reflective of the population structure.

The survey company requested 7,937 persons, randomly selected from all the 1.60 million registrants of the company, to respond to this survey. Those participants could obtain some financial incentives for their responds. We ceased the recruitment of respondents when the total participants reached more than 3,000. The response rate could be calculated as 39.4% based on 3,129/7,937, however, some of participants who were willing to respond were not able to respond due to the close of recruitment. Due to the nature of the data collection method, we do not have any information about non-responders.

Population in Japan for people aged 20-69 by 10 years of age were from 11 million for 20-29 years, lowest, to 15 million for 30-39 years, highest. In this study we set the sample size in age band based on the power of analysis.

We added the following sentences in Methods “This study originally sought to recruit 3,000 Japanese individuals aged 20 to 69 years who were registered by a web survey company (among randomly selected 7,937 persons in the total 1.60 million registrants) in September 2011. People who are interested in a survey with some financial incentives for responding voluntarily registered. The web survey company requested selected registrants to respond and ceased the recruitment of respondents when the total participants reached more than
As a limitation, we added the following sentences “In addition, as this study involved an internet survey, we do not have any information describing non-respondents.”

Consulting Editor: 2

Comments to the Author

1) The title is misleading because it sound as if the efficacy of mask use is completely explained by other hygienic behaviors that reduce influenza in this population. We do not know the relative contribution of aerosol, droplet, and indirect contact transmission of influenza. Therefore, it is inaccurate to suggest that wearing a face mask is ineffective and that it reflects “other” hygiene measures that may be responsible for reducing influenza transmission.

We respectfully disagree that the current title is misleading or that it suggests that wearing a facemask is ineffective. We believe that our title sums up the study findings succinctly, by suggesting that one particular health behavior may reflect other health behaviors in the country studied.

2) The first sentence of the introduction is inaccurate. Even general surgical masks may provide some protection from larger droplet transmission and even hand contact transmission. Please see IOM report for a discussion of masks (Preventing Transmission of Pandemic Influenza and Other Viral Respiratory Diseases)

Thank you for your comments. We have revised the text as follows; “Even though a face mask could provide some protection from inhaling larger droplet and hindering hand contact to the mouth and nose, the mask itself does not fit tightly enough to block droplets from entering between the face and mask.”. We also refer the IOM report.

3) Introduction: Issues of confounding when wearing a face mask are
primarily an issue for non-randomized studies. There have been several published randomized studies (even cited in this manuscript as well as the IOM report above) that show randomization to wearing surgical masks and layering with hand hygiene can significantly reduce influenza illness incidence and transmission. This has been shown in studies with relatively high compliance and overall low hygiene behaviors (students in the study by Aiello et al. JID and PloS One) and among household members with high compliance to mask wearing in the study by Cowling et al. in Hong Kong.

We appreciate these comments and have revised the part of introduction as follows;” The positive effectiveness of wearing face mask at certain settings with high risk of influenza infection such as staying with influenza patients at home and shared living setting were shown in recent studies. When a face mask is used correctly by infected individuals, it may prevent household transmission by hindering the spread of infective respiratory droplets [1-3]. Wearing a facemask and hand hygiene practice prevented respiratory illness in shared living setting among young adults [4, 5] with relatively high compliance of wearing a mask. However, still in some studies, there was a limitation that compliance for wearing a face mask was low especially for non-randomized studies [6, 7].” and "Aside from the potential public health benefits, examining these associations would also be very helpful to minimize statistical confounding in research on the effectiveness of face masks for non-randomized studies.”

4) This issue of confounding is brought up again in the discussion “Given the intrinsic cultural aspects of hygiene and personal protective measures[10], future studies to assess the efficiency or effectiveness of wearing a mask should consider these hygiene measures as possible confounding factors.” Most public health authorities would argue that this is not confounding and that it is a layered effect (as shown in randomized studies mentioned above) of both masks and hygiene together on influenza outcomes. Clearly, there is some protection for respiratory infections by hand hygiene (Aiello et al. American Journal of Public Health). Therefore, studies that control for other hygiene behaviors that are seeking to identify the impact of masks alone would not contribute to understanding how
measures promoted by public health officials will reduce transmission of infection or how layering interventions together may promote health by preventing disease.

We deleted the sentence which you pointed out.

5) It is notoriously difficult for people to accurately recall their hygiene practices. There may be bias among people who wear masks since they may also be more inclined to report that they do all of the other hygienic practices at higher rates than individuals who report lower mask use. This is not clearly discussed in the limitations section of this manuscript.

We added the following sentences in the limitation; “Secondly, it is difficult for people to accurately recall their hygiene practices. There may be bias among people who wear masks since they may also be more inclined to report that they do all of the other hygienic practices at higher rates than individuals who report lower mask use.”

6) The statement “Although the effectiveness of wearing a face mask for preventing infectious diseases has been investigated in various other studies [4,6, 16-19], most have not considered the possible association between wearing a face mask and other hygiene practices.” is false. The randomized intervention studies on mask use funded by the CDC specifically called for an assessment of single and layered interventions (face masks alone and face masks and hand hygiene together). For example, in the Aiello et al studies, randomization worked properly such that the hand hygiene measures were not statistically significantly different in the mask only group versus the control group. Of course the mask with hand hygiene group was significantly different than the control group because part of their intervention was hand hygiene (subjects were given alcohol-based hand sanitizer and instructed to use it throughout the day).

7) The statement “In addition, compliance rates for wearing face masks have not been adequate to fully assess the effectiveness of this type of device [6, 7] ” is factually incorrect. Both the Cowling et al. studies and the studies by Aiello et al. had relatively high reported compliance rates.
We deleted the sentences which you pointed out. We really appreciate your comment. We revised the sentences as follows in Discussion; “Although the effectiveness of wearing a face mask for preventing infectious diseases has been investigated in various other studies [1, 3, 5, 6, 8, 9], most have not considered the possible association between wearing a face mask and other hygiene practices. However, we should note that a randomized controlled study allocating wearing mask only and the control group showed that there were not statistically significantly difference in hand hygiene practice[4]. For further studies to assess the contribution of facemask to prevent respiratory infection, monitoring of other health behaviors is necessary. “

While we appreciate your comments, we intend to discuss the methodology in further studies, but cannot reflect your comment in our manuscript.

We trust that our revised manuscript meets with your favorable consideration.

References:


