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SICHUAN UNIVERSITY

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September 16, 2021

Daniela Molinari, PhD

Natural Hazards and Earth System Sciences

Dear Dr. Molinari,

We would like to thank you for the opportunity to revise and resubmit our manuscript (nhess-2021-42), entitled “Effective earthquake early warning systems: Appropriate messaging and public awareness roles”. We appreciate the helpful and insightful comments from the editor and peer reviewers.

In this minor revision of our manuscript, we have carefully considered and responded to each suggestion, which can also be found as an annex to this letter. Based on your suggestion, we have tested the role of demographics variables on public responses to and their knowledge about earthquakes. The results indicate that males and people with certain occupations (e.g., governmental organizations and emergency institutions) may be more likely to have already received the type of pre-earthquake training necessary for them to know how to respond to earthquake warnings. However, as we explain in the revised manuscript, due to the likelihood of self-selection bias in our sample, more research is necessary to verify and explore the implications of these findings. We have made a few changes to some sentences to add greater clarity and also carefully proofread the revised manuscript. As per your request, we have prepared both revised and marked-up versions of our manuscript.

We believe these revisions have significantly improved this manuscript and look forward to this opportunity to be considered for publication in *Natural Hazards and Earth System Sciences* as a “brief communication”.

Please feel free to contact me with any questions or concerns you may have.

Sincerely,

Ya Tang, PhD

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Annex

Point-by-point responses to comments from the editor

Dear Meng Zhang and co-authors,

Thank you again for the submission of your paper “Brief communication: Appropriate messaging is critical for effective earthquake early warning systems” to NHESS.

The revised version you supplied has been sent to two anonymous referees that agreed on the suitability of your paper for publication, after some technical amendments. Still, as editor, I think that the description of the sample and the statistical analysis you did must be further improved to reach the quality level of the journal, even if it is a brief communication paper. For this reason, I recommended “minor revisions”.

We thank you for your helpful suggestions, constructive feedback, and the opportunity to improve our manuscript for publication. We have responded to your specific comments below.

Section #1: In detail, I agree with one of the first referee that more details regarding the survey respondent recruitment and representation should be included, stressing that results can be affected by a possible bias due to self-selection (as you explained in your response). I do not agree with you when you state that such a bias limits the analysis of the role of education, social status, gender, etc., so I encourage you to include such kind of analysis in the paper.

In response to the first referee you mentioned, we previously added additional details regarding the survey respondent recruitment and sampling (Lines 122-124). Based on your suggestion, we have tested the role of demographic variables on how the public responds to and their knowledge about earthquakes. The results (Table S1) show that gender and occupation were significantly associated with the public response to earthquake warnings. This may indicate that males and those with certain occupations (e.g., governmental organizations and emergency institutions) are more likely to have already received the type of pre-earthquake training necessary to know how to respond to earthquake warnings. However, due to the likelihood of self-selection bias in our sample, more research is necessary to explore the implications of these findings. We explained these findings and discussed their implications in a new paragraph in our revised manuscript (Lines 145-152) and included the results in a Supplementary Table (S1).



Finally, I would suggest to change Figure 1 with an improved-quality and more significant one.

Response: Based on your suggestion, we have modified Figure 1 with improved-quality and higher resolution.

Section #2: I also recommend you to provide the technical amendments suggested by the second referee (which I also report below for the sake of simplicity):

1. Line 94: change “can FJEA” with “FJEA can”

Response: We have changed “can FJEA” to “will FJEA” to clarify our intended meaning.

2. Line 101-102: the sentence “In contrast to the demonstration EEWS,” is not clear

Response: We have revised this sentence as “In contrast to the hybrid demonstration EEWS introduced in Peng et al. (2020)” to add greater clarity.

3. Line 109: delete the words “Of these”

Response: Done.

4. Line 130: add some reference for SPSS, and add the word “software”

Response: Based on your suggestion, we have added a reference for SPSS and also the word “software”.

5. Line 133: after “The results” add “(Fig. 2)”

Response: Done.

6. Line 153: “alerts. However” change point with comma

Response: Done.

7. Line 154: change colon with point at the end of the sentence, or use bullet points for the four issues

Response: Done.

8. Line 157: change “can people” with “people can”

Response: This sentence grammatically is an “Only when A can B happen” construct (e.g., Only when an EEWS is sufficiently tested [...] can people understand the meaning of an alert [...]). One of our co-authors is a native English speaker and disagrees, respectfully, with this suggestion.

9. Line 180: add “of seismic intensity” after “at what level”

Response: Based on your suggestion, we have added “of seismic intensity” to add greater clarity.

10. Line 183: add “(Fig. 2)” after “Groups A and B”

Response: Done.

11. Lines 197-198: the sentence: “The most important component of a successful EEWS is a group of users who want alerts and can define the necessary capabilities of the system” is not clear

Response: We have revised this sentence to “The most important component of a successful EEWS is a group of users with awareness and preparedness, who want alerts and will take protective actions”.

Would you please also provide an ‘author’s reply’ to my comments and include a track changes document between the old manuscript and the new one (you can include this as part of your ‘author’s reply’).

Response: As per your request, we have prepared a new version of the manuscript with the track-changes.