

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Factors associated with Healthcare Workers Willingness to Participate in Disasters: a cross-sectional study in Sana'a, Yemen
AUTHORS	Al-Hunaishi, Weiam ; Hoe, Victor; Chinna, Karuthan

VERSION 1 – REVIEW

REVIEWER	Roberto Lucchini Icahn School of Medicine at Mount Sinai, New York
REVIEW RETURNED	10-May-2019

GENERAL COMMENTS	This study approaches the willingness of Health Care Workers towards participating in emergency preparedness in disasters' health program.
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REVIEWER	Olushayo Olu World Health Organization Juba, South Sudan
REVIEW RETURNED	22-May-2019

GENERAL COMMENTS	<p>Reviewer's comments</p> <p>General</p> <p>The manuscript documents a very important public health disaster risk management topic: willingness of health care workers to participate in disaster response in a humanitarian crisis context. The study appears to be well conducted and manuscript well written. Nevertheless, there is room for improvement in the quality of the document as stated in my specific comments below. The authors need to pay attention to several typographical and grammatical errors which makes some of the text confusing. Furthermore, there has to be consistency in the use of acronym; authors should ensure that all acronyms used are listed in the table of acronyms. For instance, the authors used HCW and HCP interchangeably without listing HCP in the list of acronyms.</p> <p>Specific</p> <p>Title</p> <p>The title of the manuscript is succinct and clearly describes the content; the author may wish to include the study methodology at the end of the end to read: "Factors associated with healthcare workers willingness to participate in disasters in Sana'a, Yemen. A cross sectional study"</p> <p>Abstract</p> <p>This section is well written and can be understood as a standalone</p>
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document. I would suggest merging the section on design, setting and participants into a single section called methods. You may also consider changing objectives to introduction.

Introduction

This section has all the key elements and is generally well written. I do believe that the first 2 paragraphs on page 4 could be abridged and combined focusing more on health care workers:

- What is disaster? What is the current disaster situation in Yemen? (these two questions have been answered in paragraph 1 and 2 but could be abridged)
- Who is a healthcare worker?
- What is the impact of disaster on healthcare workers and vice versa?
- What is the impact of healthcare workers participation in disaster response? (Sustained functionality and availability of health care services, reduced morbidity and mortality, better health outcomes etc.)
- Line 10-14 of page 5: the objective of this study need to be further defined. Why is it important to know the factors associated with willingness of health workers to participate in disaster response? In other words, what benefit would accrue from knowing this association?
- In line 18-20 of page 7, the author mentioned about testing a hypothesis of the study; that hypothesis should be clearly stated here if any?

Methods

- In view of the fact that multivariate logistic regression analysis was conducted on the data, the authors should describe how the sample size of 614 was reached (first line of page 6). The formula used should be presented here or details included as a supplementary file.
- Line 19-24 of page 6 sounds more like results and should be moved to the relevant place
- Line 21-22 of page 7: which hypothesis are you referring to? Please see my comments on defining a study hypothesis under the introduction section above

Results

This section is generally fine. Please find below a few suggestions on how to further improve it:

- Since you have set the validity of your results at $p < 0.25$, it would be helpful to include columns indicating the corresponding p-values in tables 3 and 4
- Furthermore, this would help to clarify how you eliminated variables in the bi and multivariate analysis models. In this regard, I would suggest that you indicate somewhere in the result section which variables were eliminated after the bivariate analysis

Discussion

This section has all the main elements but could be restructured for ease of understanding. In general, the authors are advised to focus on presenting and rationalizing their findings.

- Specifically, I would suggest the following structure for this section:
 - o Paragraph 1: a short summary of the main objectives, hypothesis and findings of this study and a summary statement on whether this study has answered the research hypothesis or not
 - o Paragraphs 2-4: exhaustive discussion and rationalization of each of the key findings of the study i.e. the factors which are associated

	<p>with willingness to participate in disaster response. What could be responsible for the association between willingness to participate and age, gender, previous experience, trust in work safety and self-efficacy of respondents? (these have been well addressed in paragraph 2 and 3 of page 12 and paragraphs 1 to 2 of page 13) o Paragraph 5: study strengths and limitations o Paragraph 6: conclusions</p> <ul style="list-style-type: none"> • Line 50 to 60 of page 11 and line 1-22 of page 12: how is this important to your findings? I think this is redundant and should be deleted • Under the study limitations, please elaborate on “self-administered questionnaire limitations”. What are these limitations and what did you do to mitigate them? <p>Conclusion Line 51-55 of page 14: I would suggest recommending the importance of early exposure of healthcare workers to relevant disaster experience which would further boost their willingness to participate in disaster response</p> <p>References The authors should pay attention to ensuring that the references meet the Journal guidelines. For instance, many of the reference do not have full details (journal volume or issue number etc.), web link date that documents were accessed. Furthermore, journal names should be written in the standard journal abbreviation.</p>
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VERSION 1 – AUTHOR RESPONSE

Reply on the reviewers’ comments;

We appreciate the Editor’s and reviewers’ comments and suggestions on how to improve the article. We are thankful for the positive comments from all the reviewers. In addition, we are grateful for indicating the points we might have left unintentionally unclear. We agreed with the critique and have revised the article accordingly. With the added amendments, we hope that the final submitted article has improved, and we hope we have adequately captured the main points that needed a change. Also, please let us know if there are any other points need to be improved. Editorial requests:

- We have improved the quality of language in the article and added the study design in the title to better show the essence of the article.
- The ‘strengths and limitations’ section of the manuscript was summarised to better address the methodology part of the study.
- The way the sample size was calculated in the study was further explained. The questionnaire of the study was also added as an additional file. As for the raw data, the data of the study remains under current use as part of ongoing active research, dissemination of this data is respectfully not presently feasible.

General

- The competing interest section was clearly stated as ‘None declared’
- The acronyms were standardised to HCW which has was listed in the table of abbreviations.

Specific

Title:

- The type of the study was added to the title.

Abstract:

- There was no changes in this section as it was written according to the “instructions to the author” requested in the journal specifications). Replay: We appreciate the positive comment.

Introduction:

- We have tried to make the first two paragraphs more concise. It included the main points indicated in the comment.
- Who is a healthcare worker? Definition was added
- What is the impact of disaster on healthcare workers and vice versa? The impact was added.
- What is the impact of healthcare workers participation in disaster response? The impact was noted.
- Why is it important to know the factors associated with the willingness of health workers to participate in disasters response? Answer was added: most of the previous studies reported an anticipated decrease in health workforce during disaster as not all HCW are willing to participate in a disaster. Therefore, studying the factors that associated with willingness could elevate the number of attendances to reach its optimum.
- What benefit would accrue from knowing this association? The benefit was added: Most of the previous studies reported an anticipated decrease in health workforce during disaster as not all HCW are willing to participate in a disaster. Therefore, studying the factors that associated with willingness could elevate the number of attendances to reach its optimum.
- The author mentioned about testing a hypothesis of the study; that hypothesis should be clearly stated here if any? We have tried to tie the idea and explanation of using the socio-behavioral theory (self-efficacy theory) through the article to have a better flow and explanation of the ideas. And so, the name of the theory was stated in the introduction 'The study factors were built based on the self-efficacy behavioral theory'. Further Explanation on the theory, and how it was tested, was stated in the methodology section, to better give a better explanation on how the study's factors were determined. Then we presented the factor analysis that was made before association analysis at the result section.

Methods:

- In view of the fact that multivariate logistic regression analysis was conducted on the data, the authors should describe how the sample size of 614 was reached (first line of page 6). The formula used should be presented here or details included as a supplementary file. Reply: the way used to calculate the sample was father explained, the reference of the study used for the calculation was also add.
- Line 19-24 of page 6 sounds more like results and should be moved to the relevant place. Not clear what is should be moved. Replay: we made changes to clarify this part and moved the needed part to the results.
- Line 21-22 of page 7: which hypothesis are you referring to? Please see my comments on defining a study hypothesis under the introduction section above. We have included the theory at the end of the introduction, and we added a full explanation on the theory in the methods. We tried to reorganize this part to give a clearer explanation of the theory first then how the self-efficacy factor was built based on the explanation provided.

Results:

- Since you have set the validity of your results at $p < 0.25$, it would be helpful to include columns indicating the corresponding p-values in tables 3 and 4. We added the p-values' columns in table 3 and 4.
- In this regard, I would suggest that you indicate somewhere in the result section which variables were eliminated after the bivariate analysis. The exclusion criteria was explained in the method. With the addition of the p-value to table 3 and 4, it has become clear which variables was excluded.

Discussion:

- This section has all the main elements but could be restructured for ease of understanding. In general, the authors are advised to focus on presenting and rationalizing their findings. We added a summary of the variables and the result.

- Paragraph 1: a short summary of the main objectives, hypothesis and findings of this study and a summary statement on whether this study has answered the research hypothesis or not. It was added.
- Paragraphs 2-4: exhaustive discussion and rationalization of each of the key findings of the study i.e. the factors which are associated with willingness to participate in disaster response. What could be responsible for the association between willingness to participate and age, gender, previous experience, trust in work safety and self-efficacy of respondents? (These have been well addressed in paragraph 2 and 3 of page 12 and paragraphs 1 to 2 of page 13) we appreciate the positive comments.
- Paragraph 5: study strengths and limitations. We added a brief that was incorporated with the conclusion in the last paragraph of the discussion part
- Paragraph 6: conclusions
- Line 50 to 60 of page 11 and line 1-22 of page 12: how is this important to your findings? I think this is redundant and should be deleted. We find it emphasizing the previous ideas mentioned in discussion and showing the importance of studying willingness associated factors in a humanitarian context. Hence we kept this section.
- Under the study limitations, please elaborate on “self-administered questionnaire limitations”. What are these limitations and what did you do to mitigate them? We added further explanation. We added more detailed information.

Conclusion

- Line 51-55 of page 14: I would suggest recommending the importance of early exposure of healthcare workers to relevant disaster experience which would further boost their willingness to participate in disaster response. It was added

References

- The authors should pay attention to ensuring that the references meet the Journal guidelines. For instance, many of the reference do not have full details (journal volume or issue number etc.), web link date that documents were accessed. Furthermore, journal names should be written in the standard journal abbreviation. We have edited the references to include the needed information where applicable.

VERSION 2 – REVIEW

REVIEWER	Olushayo Olu Country Director World Health Organization Juba, South Sudan
REVIEW RETURNED	15-Aug-2019

GENERAL COMMENTS	<p>Thank you for addressing most of my comments. The manuscript now reads much better than the first version. However you should make the following minor but essential changes in the next version of the manuscript:</p> <ul style="list-style-type: none"> • In the abstract, change objectives to introduction and merge design, setting and participants into methods. Also write out all the acronyms in this section in full (abstracts should contain acronyms) • Please include the formula used for calculation of the sample size under the study design sub-section and details of the calculation as a supplementary material
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	<ul style="list-style-type: none"> • There are still several typographical and grammatical errors in the manuscript; you should employ the services of a native English speaker to proof read and copy-edit before re-submission <p>Otherwise congratulations on a well done job!</p>
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VERSION 2 – AUTHOR RESPONSE

Many thanks for the opportunity to read again through the manuscript and edit the needed parts. We hope that after the editing and proof-reading we have made; the paper has become easier for the reader to understand.

We appreciate the reviewer's observation about the abstract subtitles. It's to our knowledge that the abstract should be written with the current subtitles. The current version is actually the outcome of an earlier modified version that had IMRAD subtitles (introduction, method, results and conclusion). However, we had to change it to the current subtitles during the manuscript checking process, and so we kept the current subtitles. Nevertheless, we made some changes to the abstract to be more concise.

Regarding the sample size calculation, we appreciate the reviewer's close reading of the manuscript and inputs on this matter. We have used openepi software to do the calculation, the formula explained in the following link (<https://www.openepi.com/PDFDocs/SSCohortDoc.pdf>). We mentioned the name of the software in the methods part of the manuscript. We chose the Fleiss with CC sample size and used the odds ratio of an old study which was cited in the manuscript.

Thanks again for the chance to learn and improve our manuscript.

VERSION 3 – REVIEW

REVIEWER	Olushayo Olu World Health Organization South Sudan Olushayo Olu
REVIEW RETURNED	24-Sep-2019
GENERAL COMMENTS	As suggested in my earlier review, please ensure that you change objectives to introduction and merge design, setting and participants into methods in the abstract section. Final proof reading and copy editing would further improve the quality of the published article. Good luck!

