Reviewer’s report

Title: Job satisfaction, work stress, and turnover intentions among rural health workers: a cross-sectional study in 11 western provinces of China

Version: 0 Date: 13 Mar 2018

Reviewer: Marie-Josee Fleury

Reviewer’s report:

Overall the study is well written, pertinent and will make a good contribution to the literature. However, I recommend some major modifications:

Summary:

1) The notion of "rural health workers" (RHWs) brings confusion to the article. I thought this concept included interdisciplinary staff such as nurses, social workers, physicians, etc. In fact, it seems to include only different types of "medical doctors". This should be clarified, and the authors should replace RHWs with a term more related to the type of profession involved, namely, doctors. RHWs is too much of a generic term.

2) The Methods section should provide more information on the setting, and data collection procedures. The analyses are too detailed for a summary, i.e. we do not need all the SPSSS details. The introduction of factor analyses also creates confusion regarding the objective of the study, and the multi-level analyses are not discussed, as would be appropriate.

3) Results: As the article is intended for an international audience, the $US dollar or Euro values need to be provided (in parentheses), here, and elsewhere in the manuscript.

Introduction:

1) P. 3, the term "occupational structures" (and elsewhere: organizational management, occupation - p. 8) needs to be defined, or described.

2) A short description of the working context of medical staff (i.e. research background), both in China generally and comparing urban and rural areas in China, needs to be provided, either in the Introduction or in the Methods section. Very little information on the working conditions of medical staff has been provided. In order to better understand work satisfaction, it would be important to explain the overall work conditions of medical staff in China. In this new section, the types of "medical doctors" should also be described in detail (training, work, and working conditions).
3) P. 5: the paragraph on job satisfaction and work stress needs to be improved; it is not very clear, and too lengthy.

4) The originality of the article for an audience outside of China needs to be more fully described.

5) The Development of specific hypotheses would have strengthened the paper.

Methods:

1) It is not clear to me whether the randomized method related to the 11 provinces in China, or to the counties within those provinces. How many provinces and counties are there in China? What are the average populations for each of the territories selected, and how representative were these 11 provinces among Chinese territories generally? How were the 11 provinces selected and why the focus on rural settings (e.g. provide full criteria)? All this should be better explained.

2) There is no information given on the total number of doctors invited to the study, and on the recruitment process. Why the number given for the CDC was smaller is not justified. Why the target was fixed at 50 or 30 RHWs; all of this needs to be explained, or justified.

3) I would also be relevant to justify the distribution of age categories (especially the designation of the older group as 41 years and over).

4) As there are 11 provinces, and 5 types of medical institutions (and a "n" of 5046 RHWs), multilevel analysis should have been used as a way of controlling for the effects of provinces. Why was this analysis not performed? At least, this omission should be introduced as a limitation of the study.

5) What instruments were used to measure job satisfaction and work stress instruments? The instruments should be identified. It seems that "in-house instruments" were used. There is no mention of known instruments used, with references. Why did the study not use known and validated instruments (there are several very good instruments for these variables)? This is why the factorial analysis was used, I believe. However, the validation process of instruments needs to include more than just factorial analysis. If "in-house" instruments were used, what validation procedures were applied; or what other publications can be referred to for a previous validation of these instruments? This is a "key pitfall" of this article if "in-house" instruments have been used without a careful validation procedure, and if there are no previously published papers related to this issue.

Results:

1) There is no information on response rate, and no comparison tests (if possible) were performed for respondents and non-respondents.
2) This section is too long, and quite complex to read (particularly the final sub-section). The text should be reduced, and should focus on the more pertinent results and on the multi-level analyses (and the rest presented in accompanying tables).

Discussion:

1) Why, if a sense of obligation is so important for the Chinese, was this variable not controlled for in "turnover intention"? At least, this should be introduced as a limitation.

2) re p. 18ff, several comments are provided in relation to the discussion on the quality of health care services, which is out of context, and not related to the results. The authors need to discard all the comments that are not clearly linked with the study results.

3) This entire section needs to be reworked and more comparisons introduced in relation to international findings. At various point, the observations made are really too "local", and too narrowly focused on RHWs in rural China, which is of limited interest for international readers. How could the data be compared with the general literature on this subject, or in relation to rural settings internationally?

4) p. 20: there are two comparisons (lines 2-3 and 7-8), where no references are cited in support of this information, and where the links with study results are not clear.

Conclusion:

-More detail is needed, and strong recommendations should be provided in relation to the study findings. The recommendations are too vague, and actually tend to question the real contribution of this article. The overall conclusions should be improved: centered on the findings, originality of the article, and especially on recommendations for improving overall work satisfaction and turnover (and reduce stress) among RHWs.

General comments: There is considerable information provided in the article without references (e.g. p. 4 "Job satisfaction is the most common predictor"; p. 5 "previous research documents the significant..."); p. 21 "which is consistent with related studies", etc.). The entire article should be revised, and references added where necessary.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No
Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons
CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal