Author's response to reviews

Title: Factors associated with self-rated health among North Korean defectors living in South Korea

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Author's response to reviews: see over
Dear Dr. Gloud,

Re: Manuscript reference No. 1567222474122277

Please find the attached document of a revised version of our manuscript, “Factors Associated with Self-rated Health among North Korean Defectors Living in South Korea”, which we would like to resubmit for publication in BMC Public Health.

Your comments and those of the reviewers were very insightful and enabled us to further hone the quality of our manuscript. In the following pages are our point-by-point responses to each of the comments of the reviewers.

Revisions in the text are marked in blue. We hope that the revisions in the manuscript and our accompanying responses will be sufficient to make our manuscript suitable for publication in BMC Public Health.

We look forward to hearing from you at your earliest convenience.

Yours sincerely,

Young Dae Kwon, MD, PhD
Response to the comments of reviewer, Bengt Arnetz

1. References are too limited to Korean research. The authors are encouraged to expand their literature and generalize their findings when appropriate.

Response: North Korean defectors residing in South Korea are one among many refugee groups around the world. For this reason, we conducted literature reviews and cited relevant research regarding refugee health worldwide, and we referenced studies related to refugee health status (Reference 9, 12, 13, 17). However, the study required an examination of subjects that resided in South Korea because these defectors may experience unique conditions different from other refugees or North Korean defectors residing in other countries. Also, Korean researchers have conducted the majority of research focusing on distinct characteristics of North Korean defectors. Therefore, we mainly used to Korean studies as reference material. Moreover, we made attempts to review and cite sources written in English by Korean researchers as much as possible in order to overcome the limitations arising from a small number of studies conducted by researchers abroad.

2. ABSTRACT: State whether interviews were structured, used a survey.

Response: The interviews were structured and conducted by ‘Yonsei University Research Team for North Korean defectors.’ We added this information in the abstract.

3. Please clarify how participants could be divided into having been
in South Korea Less than vs more than 18 months when ALL study participants arrived between January and December, 2007 (p 4, l 11).

Response: Duration of residence in South Korea was defined as the period between an individual’s arrival date until December 31, 2008, and it was classified as less than 18 months or 18 months or longer. In response to the comment, we now include this information in the text to avoid confusion.

4. Was trauma in South Korea assessed as well, or only during life in North Korea and during the transit phase?

Response: Trauma in South Korea was not assessed. Only the trauma experienced in North Korea and during the defector’s escape was assessed, and this information was described in the original text.

5. RESULTS: Table 1, Means (SD) and Beta used in the same column. unclear.

Response: A new column was made and the Mean (SD) and Beta were separated in order to avoid confusion.

6. Income, is this correct, considering a substantially higher amount listed in the discussion section?

Response: Income amount listed in the Discussion is correct. The household income used in the tables was calculated using the natural logarithmic transformation, but the income used in the Discussion was not transformed. The revised paper includes this information in the footnote of the tables.
7. **Table 2. Specify type of regression in headline, linear.**

**Response:** The title of Table 2 has been changed to linear multivariable regression.

8. **P 9, l 17, change $<=$ to $>=$ 18 months**

**Response:** Following the recommendation, $\leq$ 18 was changed to $>$18 months.

9. **P 10, l 5 (last paragraph). Sentence does not read correctly. ...resilience plays a role in mediating the decrease of physical and mental adaptation... I assume the authors mean increase in mental and somatic health. That is, the opposite from what has been written.**

**Response:** As pointed out, the original description was inaccurate. The sentence has been changed to convey the correct information: “Previous studies revealed that resilience has a positive effect on one’s physical and mental adaptation caused by trauma or high levels of stress.”

10. **CONCLUSIONS: Both here, and implied in the Discussion section, authors highlight the need to reinforce refugee assistance programs. This might be true, BUT, based on THIS study, what motivates this statement. For example, Table 2, what findings of significance there would be addressed by means of refugee assistance programs. Please expand your reasoning.**

**Response:** As pointed out, the original draft made unqualified statements that lacked proper reasoning.
We made appropriate revisions regarding the statements in the Discussion section. The Conclusion was also changed accordingly: “government policies and refugee assistance programs should consider and reflect the length of stay in South Korea, satisfaction with government support and with their current life, and the traumatic experiences in North Korea.”

11. The term influence, influencing is used throughout the manuscript, including in the title. Since this is a cross-sectional study, terms such as association should be used.

12. P 4, l 7, change affect this status to are associated with this status or some other term indicating this is not a cause-and-effect study, but cross-sectional.

Response: As mentioned in your comments, the term ‘influencing’ is not appropriate for this study. Thus, we made appropriate changes to the terms to reflect the findings of this study, and now the paper utilizes words, such as ‘association’ and ‘relation’.

13. Background: P 3, l 11, provide examples on tertiary countries.

Response: Specific examples of the tertiary countries, like China and Russia, were added to the text.
Response to the comments of reviewer, Kevin Pottie

1. There is a need to include a reference to show how self rated health is related to general health status. This currently is not in the document.

Response: A reference was added to support the claim that self-rated health corresponds to a person’s general health status. “Self-rated health is widely used in cross-sectional studies as a single-item health outcome measure that strongly correlates with objective physical and mental health status (Demirchyan et al\textsuperscript{1}, 2012).”

2. It is also important to explain why the categories for self rated health were not the usual: excellent, very good, good, fair and poor. This research group used excellent, good, fair, bad and poor; I wonder if this is an English translation issue. Because it is important to line of the measurement categories with those of thousands of other papers on self-reported health. If indeed this group used alternative categories there will be a need to show the references, primary, measurement research, behind this alternative category.

Response: There was an error in the process of translation, and the self-rated health status measurement scale was changed to the following categories: excellent, very good, good, fair, and poor.

3. Finally the authors report an average for the self reported health outcome. Yet it was not a continuous variable to start, it was categorical. This is not the ideal statistical way to deal with this measurement question. Normally the 5 categories would be grouped into good and poor health, making it a dichotomous variable, and this would be used for logistic regression or multivariate analysis. Because there are 5 categories and 3 respond to poor health, the idea of using an average introduces a bias at several levels.

Response: As mentioned in the comments, many studies on self-rated health conducted logistic or ordinal regression analysis. However, there was a considerable amount of research on self-rated health conducted continuous and linear regression analysis (Maximova & Krahn\(^2\), 2010; Singh-Manou et al.\(^3\), 2006; Zunzunegui et al.\(^4\), 2001; Ostrove et al., 2001\(^5\)). Because the distribution of self-rated health in this study resembled the shape of a normal distribution and there is evidence to suggest that self-rated health forms a continuum from poor through average to good health (Mackenbach\(^6\) et al., 1994; Manderbacka\(^7\) et al., 1998), the application of linear multivariable regression models is justified, and further comparability of a five point measure of self-rated health seems appropriate. Thus this study applied a stepwise linear regression for the analysis of independent associations in our multi-variable model. This information has been added in the Method section.


4. There needs to be an explicit limitation section added to the discussion. Currently one limitation is mentioned, but others are needed.

Response: We further addressed the limitation in the following way:

Although this study attempted to include as many refugees as possible in the interviews, and the result may not be generalizable to all North Korean defectors residing in South Korea. Also, this study analyzed data which was collected from a cross-sectional study, and so it has limitations in detecting causal relations between independent variables and self-rated health.

5. There are a number of interesting findings in this research. However, this is a cross sectional survey with a modest sample, and I feel often the authors are not recognizing the limitations of their findings when they make interpretations and comparisons to other work which is often large samples and longitudinal. There is a real risk in overstating these results.

Response: As you pointed out, the original draft overstated the study result without proper reasoning. We modified the previously overstated parts in the Discussion section.