Reviewer’s report

Title: Development of the Japanese version of the Three-Item Loneliness Scale

Version: 0 Date: 04 Oct 2018

Reviewer: Jose M. Tomas

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Review BMC Psychology

Manuscript PSYO-D-18-00159. Title: "Development of the Japanese version of the Three-Item Loneliness Scale"

Loneliness is a key psychological stressor in modern societies. Related, but not exclusive of the aging population, it is at the core of research on well-being and quality of life. Scales as the R-UCLA (20 items) and DJGLS (11 items) have been widely used for measuring loneliness. However, they are still long for some research purposes. Short versions of these scales are promising. Such as the version of the UCLA scale used in SHARE in European countries. Therefore, the main aim of the manuscript is worth investigating as there is no validated short scale of loneliness in Japanese, as the author states.

I have some comments, most of them minor, I would like the author to consider.

Abstract

* The authors state in the abstract that the TIL was "translated" into Japanese. It is important from the very beginning that the authors be sure if they translated or adapted the scale, which is not the same in psychometric terms.

* The authors do not summarize well their analyses. Examples, they say that they used the "Generalized Partial Credit Model based on the Item Response Theory", but they forget to inform that also EFA was used. The authors say that "To evaluate the psychometric properties of the scale, this study examined the associations of the scale score with...". However, this is only part of psychometric validity, factorial validity, reliability, information curves are also part of the psychometric properties of the scale. More precision with terms is needed.

* Be careful with grammar issues. An example: R-ULCA

* I do not know very well what the authors mean by sizes of personal networks. I guess they mean size of social network.
Introduction
* The introduction is clear, with updated references and goes directly to the point.
* Please avoid the term elderly. "Old adults" is better.

Method
Respondents
* Much more detailed on sampling procedures and a better description of the two samples would be necessary.
* Page 5, lines 3 to 10, have information that better suits introduction.

Materials
* In this particular case, I rather prefer measurement instruments than materials. However, this a question I let to the journal and the Editor
* I still believe that social networks is better than personal network to describe the number of people available to each person

Results
Analytical procedure
* I believe this information is misplaced. Again it is a question of the Journal and the Editor, but I would place the whole sub-section in method.

Results
* In table 1 please state what r stands for. Obviously it stands for correlation, but what kind of correlation? Pearson? Spearman?
* The Exploratory Factor Analysis should be substituted by two Confirmatory Factor Analyses (the scale is a priori presumed to be unidimensional) with the appropriate estimation method for categorical indicators because, among other things, CFA offers fit indexes.
* The assumption for using IRT models not undimensionality (it is one) but local independence. What has the author done in this respect?
* The Generalized Partial Credited Model is a 2-parameter logistic model (I guess, the author does not make it clear). Has the author considered to compare the behavior with a 1-parameter model (which has important psychometric advantages) to see if the 1-parameter model fit the data well?

* The author is not correct when says that relationships with other variables test for construct validity. Construct validity deals with all types of validation efforts, not only with relating to variables the construct should be related. For example, the relationship with R-UCLA is evidence of convergent validity

Overall, I found merits in the manuscript, and if the comments I have made are properly answered (or the manuscript changed accordingly), it may be considered for publication.

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

Yes

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

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**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 am able to assess the statistics

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

Needs some language corrections before being published

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