Reviewer's report

Title: A rasch model to test the cross-cultural validity in the positive and negative syndrome scale (PANSS) across six geo-cultural groups

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Reviewer: Neil Aggarwal

Reviewer’s report:

This article is a substantial contribution to the cross-cultural psychiatric and global mental health literature on schizophrenia. The authors have proposed a novel model to analyze psychiatric ratings across cultures which can be replicated by other investigators. My comments are meant to strengthen an already strong article and should be read in the spirit of constructive criticism.

MAJOR COMPULSORY REVISIONS

1. The authors compellingly advocate for a position that appreciates cross-cultural differences in the PANSS. However, the presentation of the data uses broad regional groups such as "East and Maritime Asia" and "Northern Europe," among other problematic labels. At the same time, India and the United States are distinguished as countries. I recommend that the authors list all countries individually to avoid stereotyping cultures within broad regions. Moreover, the terms "Maritime Asia" and "Russo Europe" are unconventional without clearly specifying countries from the outset of the article with the abstract. The explanation of the authors in the methods section is currently insufficient: for example, the authors write: "Malaysia, Singapore, Taiwan, Japan and South Korea were grouped together. An argument could be made to have included Malaysia and Singapore with India instead. However, the large Chinese populations in these two countries as well as historical interactions and broad similarities in social interaction across all of these countries was deemed adequate to group living in these five countries raters together." This assumption prioritizes similarities over differences when opposite arguments could be made. It may be better to avoid this issue entirely by presenting data by country.

2. The authors write in the introduction: "Although, many assessments used in psychopathology of schizophrenia have examined construct, functional, translational and metric categories of rating scales, the significance of rater differences across cultures in schizophrenia rating scales has rarely been investigated." I would encourage the authors to situate their excellent study in the literature on cross-cultural rater differences with the PANSS. I have published two papers explicitly on this issue comparing Chinese and American raters with the PANSS which the authors can cite and from which they can also review the bibliography for relevant references.

3. Please provide references for the methodology explained in these sentences: "Translation standards followed internationally recognized guidelines with the
Objective to achieve semantic equivalence. Semantic equivalence is concerned with the transfer of meaning across language, and aims to achieve a similar response from individuals with schizophrenia in different languages.

4. Under the methods section, this sentence references culture: "An attempt was made to include raters who were likely to share more culturally within each group." The authors should explain this more clearly. How did they make a determination about which raters would be considered to share more culture? Since culture is a key variable of interest in the paper, it should be defined explicitly with references to the cultural mental health literature. The authors should also be explicit about how they decided to group raters together based on their definition of culture. Otherwise, the reader is left wondering whether the groupings were created after data analysis.

5. Under limitations, the authors should better incorporate the extensive literature on the relationship of language and affect. A substantial scholarship has emerged in cultural psychiatry and medical anthropology on this topic. Given the fact that the raters had variable English fluency, this is a serious limitation. Similarly, the authors could also discuss how the PANSS itself is a cultural creation which may or may not match the realities of patients with schizophrenia outside of the United States. For example, an alternate reading of why international PANSS raters scored items differently may be due to differences in clinical experience: they may be trained with the PANSS as an American cultural artifact, but their actual experiences with schizophrenia in the local population may be very different. It would be interesting for the authors to discuss how cross-cultural training could consist of presenting raters with local language, culture, and affect taken into account through patients from dominant cultural groups in their societies.

MINOR ESSENTIAL REVISIONS

1. Please check grammar throughout the article. This sentence could be substantially clarified from the abstract: "Lower item values reflects items in which raters often showed less difficulty scoring; higher item values reflects items more difficult to score." Noun/verb agreement and clarity of which items would be helpful.

2. Please clarify this sentence in the article: "The goal of this study was to examine the cross-cultural validity of the PANSS scale across six geo-cultural groups (East & Maritime Asia, India, Northern Europe, Russo Europe, Southern Europe, and the United States of America) using Rasch analysis of data United States training video (the video was translated and subtitled for other languages)."

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published
Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests: 'I declare that I have no competing interests