Author's response to reviews

Title: Psychometric Properties of the Chinese Version of the Fatigue Scale-Adolescent

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Author's response to reviews: see over
Dear Editor and reviewers,

Thanks for your insightful and constructive comments on my manuscript (MS: 1378078626165418) entitled “Psychometric Properties of the Chinese Version of the Fatigue Scale–Adolescent” I have made changes accordingly, which are highlighted in Red in the text. Please also refer to the following point-by-point responses to the comments from all reviewers and editor. Also, let me know in case any responses are not clear or the information is not adequate to clarify concerns. Thanks for giving us an opportunity to revise the manuscript.

Sincerely,

Authors
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<th>Reviewer 1</th>
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<tr>
<td><strong>Comment 1</strong></td>
<td>The authors should further stratify their results according to the primary malignancy and mode of treatment delivered to the patients e.g. Radiotherapy alone, Chemotherapy alone, BMT, Chemoradiotherapy. This will make the results more interesting.</td>
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<td><strong>Response 1</strong></td>
<td>Thanks for your suggestion. However, the primarily aim of this study was to test the psychometric properties of the Chinese version of the Fatigue Scale for Adolescents. Although it is interesting to examine whether the diagnosis and mode of treatment received might have impact on the outcome (fatigue), it would be a good consideration to report this issue in next or future paper. Anyway, given that this suggestion, we have conducted correlation analyses to examine whether any demographic and clinical characteristics might have impact on adolescent survivors’ fatigue. The results indicated that there was no statistically significant correlation among the variables of the fatigue scores and the participants’ gender, diagnosis, type of treatment received, time since treatment was completed, and parents’ educational attainment. After thorough discussion among the research team, we decided not to further stratify the results according to the primary malignancy and mode of treatment delivered to the patients in this manuscript.</td>
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<td><strong>Comment 2</strong></td>
<td>The discussion should be enriched by adding results and references for similar analysis done for other ethnic groups e.g. Americans, Indians,</td>
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<td>Japanese, etc. Suggested links for such articles:</td>
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<td><a href="http://jco.ascopubs.org/content/early/2014/04/09/JCO.2013.53.4495.full.pdf">http://jco.ascopubs.org/content/early/2014/04/09/JCO.2013.53.4495.full.pdf</a></td>
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<td><a href="http://journal.sajc.org/article.asp?issn=2278-330X;year=2015;volume=4;issue=1;spage=21;epage=29">http://journal.sajc.org/article.asp?issn=2278-330X;year=2015;volume=4;issue=1;spage=21;epage=29</a></td>
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**Response 2**

Thanks for your suggestion. The manuscript has been enriched by adding references for similar analysis done for other ethnic group in both the sections of “Introduction” and “Discussion.”

**Reviewer 2**

**Comment 1**

It is not clear which version of the FS-A was used. Did the authors translate the FS-A into Chinese or did they use the version validated in Taiwanese adolescents? If the authors translated the FS-A into a Chinese version, then the procedure for translation of the FS-A-Chinese should be reported.

**Response 1**

In this study, we translated the FS-A from English into Chinese,
instead of using the version validated in Taiwanese adolescents.

To enrich the content of the manuscript, the following procedure of translation has been added to the text:

“The FS-A was translated according to the recommendations suggested by Bracken and Barona (1991). During the process, a researcher would translate the FS-A from English to Chinese. Another bilingual translator who blinded to the FS-A was then asked to complete the back-translation. To ensure the meaning of each item was kept, a comparison was made between the original and re-translated English versions. Disagreements were resolved by the expert panel which included a pediatric oncology nurse specialist, two pediatric oncology researchers and three lecturers working at a local university, all of whom were bilingual and had experience of translating and validating instruments.”

In addition, we also ensure the semantic equivalence (reported in the manuscript), which implies that each item remains conceptually and idiomatically the same after translation.

<p>| Comment 2 | The content equivalence was only determined using one single question related to “relevance” of the item. It remains unclear whether the questionnaire used to collect the content equivalence specifically indicates relevance to cancer survivors not cancer adolescents during treatments as the authors set out to investigate the psychometric performance of this scale in cancer survivors. |</p>
<table>
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<th>Comment 3</th>
<th>The major problem with this study is that item-reduction was based on expert opinions with one content validity question—relevance.</th>
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<td>Response 3</td>
<td>Many thanks for your comment. Indeed, item-reduction was NOT only based on expert opinions with one content validity question---relevance. The decision of item-reduction was also based on the results of the Corrected Item-Total Correlation. The corrected item-total correlation values ranged from 0.10 to 0.71. Most items correlated with the total score, with the exception of items 6 (It’s</td>
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harder to keep up with school work) and 10 (I have felt angry), where
the corrected item-total correlation values were 0.10 and 0.23 (less
than 0.3), respectively, indicating that the items are measuring
something different from the scale as a whole. After a thorough
discussion in the expert panel, all members agreed to delete these two
items. The above discussion has already reported in the manuscript
(line 307 to 312).
In addition, the overall fits of the 14- and 12-item of the Chinese
version of the FS-A was tested by a variety of fit indices based on the
proposed 4-factor model (newly added to the manuscript). The results
revealed that the 12-item 4-factor model was the best fit across all fit
indices, provided further support of deleting items 6 and 10 from the
Chinese version.

Comment 4 One major premise of this instrument validation study is the question
as to whether the FS-A can be used to assess the fatigue of adolescent
cancer survivors who have completed cancer treatment remains
unknown. A second point that the authors argued for validating this
instrument in adolescents in Hong Kong is that adolescents in Hong
Kong have higher academic achievement pressure than those in
Taiwan. The first argument may stand although it is a weak one. The
second argument is buried in the discussion which not only does
nothing to strengthen the significance and relevance of the study but
also turns the scope of the study into a local concern. That is, the
validated instrument is only applicable to adolescents in Hong Kong. It is also clearly no evidence supporting the academic achievement pressure is higher in Hong Kong than in Taiwan.

Response 4

Thanks for your insightful questions. For the first concern: whether the FS-A can be used to assess the fatigue of adolescent cancer survivors who have completed cancer treatment remains unknown. As a matter of fact, the newly-translated scale (FS-A reported in this manuscript) demonstrated adequate internal consistency, good content validity, appropriate convergent and discriminant validity, and excellent construct validity (confirmed by the known-groups method). In addition, factor analyses further confirmed the construct validity of the scale, with a good fit between the factor structure of the scale and the observed data. All these suggest that the Chinese version of the Fatigue Scale–Adolescent can be used as a self-report assessment tool in measuring the fatigue level of Chinese adolescent cancer survivors.

For the second concern, we would like to clarify that we did not mention that the academic achievement pressure is higher in Hong Kong than in Taiwan. We just want to provide some possible reasons to explain why 37.5% of the adolescents answered ‘some’ and 51.5% answered ‘quite a bit’ or ‘a lot.’ when responding to item 6, ‘It’s harder to keep up with school work.’ The possible reason may be the Hong Kong children, as influenced by the traditional Chinese value,
are under tremendous pressure to cope with a heavy homework load and generally to excel in academic performance. This is undoubtable that adolescent in Taiwan also have such experience. Yet, this situation was being reflected when Hong Kong adolescent responded to the question, ‘It’s harder to keep up with school work.’

In fact, the validated instrument is not only applicable to adolescents in Hong Kong. There are Chinese adolescents living in many parts of the world, in particular in Mainland China, where healthcare professionals may use this scale in assessing Chinese adolescent survivors for the presence of fatigue and evaluating the effectiveness of interventions for reducing fatigue. We added this description in the text (line 384-388).