Reviewer’s report

Title: Reliability and validity of a novel quality of life questionnaire for female patients with adolescent idiopathic scoliosis: Scoliosis Japanese Questionnaire-27: A multicenter, crosssectional study

Version: 0 Date: 06 Oct 2017

Reviewer: Verena Schrier

Reviewer's report:

With this manuscript the authors aim to test reliability and validity of a new questionnaire designed to test health-related Quality of Life in female adolescents with idiopathic scoliosis. I understand the need for such a questionnaire in the Japanese setting and why a translated version of the SRS might not suffice. A strength of the study is the approach in design and the included numbers.

After reviewing the article I did have some issues with a couple of elements:

- Title: Although I realize that the title is already quite lengthy, I would propose to add the word FEMALE before "patients" as the current title is somewhat misleading. Additionally you are not measuring "outcomes" with the questionnaire but rather Quality of Life so I would remove that too. Suggestion: Reliability and validity of a novel quality of life questionnaire for female patients with adolescent idiopathic scoliosis: Scoliosis Japanese Questionnaire-27.

- Abstract:

        The abstract reads "for measuring outcomes" in line 49 but like mentioned before, the HR-QoI is (so far) not a measure of outcome but rather a momentous recording of psycho-social well being. Please adjust throughout the manuscript.
- Introduction:
1. The different versions of questionnaire as has been published by the SRS are confusing (especially for a reader not familiar with common questionnaires in the scoliosis field like myself). The chronological publications are addressed shortly in lines 88-92 after which the authors expand on different translations and how the Japanese translation might not be applicable due to cultural context. As to my understanding, in participants <18 years, another version was published (the SRS-22r) in 2006 which is also mentioned on the SRS website (Refinement of the SRS-22 Health-Related Quality of Life questionnaire Function domain, Asher MA, Lai SM, Glattes RC, Burton DC, Alanay A, Bago J. Spine (Phila Pa 1976). 2006 Mar 1; 31(5):593-7.) Please help me understand what the SRS questionnaire has been through so far, and why you choose to compare your SJ-27 to the SRS-22. Your reference #37 also mentions using the SRS-22r as a basis for their translation.

- Methods:
1. Please expand on the design process of the questionnaire as briefly described in lines 119-126. Did this happen in phases? How many iteration sessions were there? Were any questions discarded and if yes, why? How big was the expert committee? Were there specifically any young Japanese females involved in the process as well? If this leads to any limitations of the study please address these in the discussion.
2. The title states that this is a cross-sectional study. Please expand on your design (or at least repeat it) in from line 153.
3. Lines 162-163. Please add a brief description of the SRS-22, similar to your SJ-27 questionnaire explanation. How many questions, what type of categories, how does the point system work etc.
4. Inclusion criteria (line 155): What was the maximum age of inclusion? How many participants did you aim to have in the study? Over what time period were participants included? What did you do with co-morbidities that might influence the SJ outcome? (e.g. patients with known psycho social problems, depression etc.) If no co-morbidities were counted as exclusion criteria please address this in the discussion as possible confounding factors.
5. Line 163-165 describes that menstruation and sport/cultural activity data was recorded. Why? There is no other mention of using this data later in the manuscript. Either present
corresponding data in the results section, address in discussion or remove from methods section.

6. Line 174-175 This statistics section is where the main outcome of the article should be mentioned, but these are hardly described. What type of reliability was measured (test-retest/internal reliability etc.) and the same goes for validity. Also add what classification you use to put your numbers into conclusions (what reference values did you use etc.)

7. Add the proposed analysis for floor and ceiling effects to your statistics section. Remove calculations from results section (line 197-199).

- Results:

1. Please report on how long it took participants to complete the questionnaire, whether data was missing and whether there were any participants who preferred not to answer either the entire questionnaire or specific questions.

2. Line 192-194 describes how many participants already had conservative/surgical treatment. This is also mentioned as a limitation of your study but by categorizing the data you can see whether this affects the reliability/validity? This is especially relevant if you were to use this questionnaire as a decisional tool as described in the introduction.

3. Line 221-222: How is the shape of the domain relevant to the validity/reliability of this questionnaire. I suggest you remove the bird comparison and just describe relative positions of questions that stick out.

4. Line 218-220: I would stop after "...(Fig. 2)." And leave the rest of the interpretation and conclusion to the discussion section.

- Discussion:

1. Please address whether you agree feel that this questionnaire, based on the selection process and the reliability/validity testing, should only be used for young females with AIS.

2. By designing a questionnaire from scratch rather than basing it on the existing questionnaire, the HR-QOL issues tested with the SJ-27 differ from the ones in the SRS. Please address why the SRS was used as the validity comparison and what effects that might have on your validity results and interpretation of scores if you were to use this SJ-27 in clinic.
3. Please add the limitations of your chosen reliability and validity methods to your discussion section as well as the absence of test-retest reliability.

- Conclusion:
Line 281: Please specify that this questionnaire (for now) 1. has only been validated for female patients and 2. showed "good" validity (as you have put it in your results section).

And some minor comments that the authors may wish to address:
- The first line in the abstract contains 2 abbreviations (AIS and SRS-22) which are explained in line 50 and 51. Please do so before the first mentioning of the abbreviations.
- The Methods section of the abstract contains only repetition of what has been described in the Background section: Please rephrase and explain the process of questionnaire design and testing.
- Line 90: The author referenced here is named Haher, not Hasher.
- Line 199-200 "These results...with the SJ-27" -> this is conclusion/discussion material

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.
Yes

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:
Acceptable

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

Do you want to get recognition for reviewing this manuscript?

Add a record of this review to track and showcase your reviewing expertise across the world’s journals. Signing up is quick, easy and free!

No