

Psychometric properties and longitudinal measurement invariance of the Brazilian version of the subjective happiness scale in adolescents

Fernanda Ruffo Ortiz, Saul Martins Paiva, Isabela Almeida Pordeus, Thiago Machado
Ardenghi

Corresponding author

Fernanda Ruffo Ortiz

*Department of Stomatology – Universidade Federal de Santa Maria. Av. Roraima, 1000,
Prédio 26F, Camobi - 97105-900, Santa Maria, RS, Brasil.*

Handling editor:

Michal Heger

Department of Pharmaceutics, Utrecht University, the Netherlands

Department of Pharmaceutics, Jiaying University Medical College, Zhejiang, China

Review timeline:

Received: 21 October, 2020
Editorial decision: 21 November, 2020
Revision received: 25 November, 2020
Editorial decision: 25 December, 2020
Revision received: 28 December, 2020
Editorial decision: 29 December, 2020
Revision received: 12 January, 2021
Editorial decision: 23 January, 2021
Revision received: 1 February, 2021
Editorial decision: 2 February, 2021
Published online: 16 March, 2021

1st Editorial decision
21-Nov-2020

Ref.: Ms. No. JCTRes-D-20-00124

Psychometric properties and longitudinal measurement invariance of the Brazilian version
of the subjective happiness scale in adolescents
Journal of Clinical and Translational Research

Dear Dr. Heger,

Reviewers have now commented on your paper. You will see that they are advising that
you revise your manuscript. If you are prepared to undertake the work required, I would be
pleased to reconsider my decision.

For your guidance, reviewers' comments are appended below.

If you decide to revise the work, please submit a list of changes or a rebuttal against each

point which is being raised when you submit the revised manuscript. Also, please ensure that the track changes function is switched on when implementing the revisions. This enables the reviewers to rapidly verify all changes made.

Your revision is due by Dec 21, 2020.

To submit a revision, go to <https://www.editorialmanager.com/jctres/> and log in as an Author. You will see a menu item call Submission Needing Revision. You will find your submission record there.

Yours sincerely

Michal Heger
Editor-in-Chief
Journal of Clinical and Translational Research

Reviewers' comments:

Reviewer #1: Thank you for the opportunity to review this paper. The article investigated the psychometric properties of the Subjective Happiness Scale in a large sample of adolescents with 2 years of follow-up. The methods are sound, and the paper needs proper English revision.

I have some other comments, listed below:

Abstract:

- I believe that there is an "of" missing in the first phrase, "The aim this study". Besides, the methods section of the abstract needs to be revised in order to summarize better the research procedures; authors should explain the SHS first, and then the interview methods.

Introduction:

- Some sentences need to be rewritten; first and last paragraph need extensive correction.

Methods:

- Please, clarify if the examinations presented in the "Data collection" were performed in baseline or follow-up or both, and if the methods were the same.
- I suggest providing the values of income in U\$ dollar and the equivalence in Brazilian Reais for proper comparison.
- There is no mention to skin color or parents education in the methods section.
- Although the authors state that dental caries were assessed through CPOS, the tables present information regarding "Cavited carious lesion".
- Present the full name of the CPQ11-14 prior to its initials. Besides, Table 3 mention "CPQ11-14 Severity", and the authors should clarify how it is estimated.
- I suggest the authors present the analysis performed in the same order the results are listed, in the body of the article and abstract. Besides, include descriptive analysis.
- Although the Figure 1 shows the tests performed according to the data collection periods, I suggest the authors describe it briefly in the text.
- Tables mention that a correction factor for cluster sample were used (sample weights); it should be specified in the methods.

Results:

- The results should explore the follow-up sample and its characteristics, since they are presented in Table 1.
- Table 1 presents some typing errors.
- The title of Table 2 mentions an "effect size" calculation, but the table presents percentages and means.

Discussion:

- The first phrase of discussion does not mention the longitudinal analysis, which is the differential of the paper.
- For the ICC, authors should explore more the variation sources, especially the adolescence phase.
- The satisfaction with life construct could be better explained, in order to allow its comparison with happiness.
- The problems related to item d should be explored and in depth discussed.

Reviewer #2: The study goal was to evaluate the psychometric properties of the Brazilian version of the subjective happiness scale in adolescents. The study was very well designed; the research question is well defined; the methods appropriate and well described, the results well explicated, and the discussion and conclusions well balanced and adequately supported by the data. However, the paper as a whole, needs to be professionally proofread as there are a number of sentences that need improvement in the English level. I have some minor suggestions.

Abstract:

- Check small English mistakes. E.g.: In the sentence "The aim this study" the "of" is missing before "this".

Introduction:

- Some sentences need to have the English revised. E.g.: Line 51: "However, the scale there was bot assessed..." Line 53: "There was not assessed longitudinal measurement". The sentences mentioned need to be rewritten.

Methods:

- Study design and sample: "The adolescents were randomly selected in the public schools at city". This sentence needs to be rewritten.
- Use abbreviations consistently in the text. There are places in which authors used happiness's scale, whereas in other they employed SHS.
- Before using abbreviations, make sure to state their full meaning first. Authors cited CPQ11-14 in line 44 (Subjective measures) without the full name of the instrument.

Discussion:

- In the 5th Paragraph authors said "Socioeconomic disadvantages influence oral health outcomes (like happiness) via different pathways..." Is happiness an oral health outcome? Please review the sentence.
- "Furthermore, this item (shs_d) had already presented problems in the version Brazilian

scale" Check the English of the sentence.

- "The result indicates that happiness can be assessing in longitudinal studies among adolescents". Replace "assessing" for "assessed".

Reviewer #3:

1) the association with oral health seems tangential - it is mentioned in the first line of the abstract and then not again at all in the introduction or abstract; perhaps omit that then and make the emphasis about seeking validity evidence for the SHS in adolescence longitudinally? (that is a useful aim in itself as it relates to the study of adolescent quality of life). So either add more context in the intro about the relevance of oral health + the SHS or I would suggest to omit that, and just note that the SHS was collected in a clinical/dental setting incidentally.

2) note in the abstract that it was multi-group confirmatory factor analysis

3) what is "reproducibility results" referencing? (in the abstract); also, were all children aged 12? maybe include mean at time of administration in the abstract

4) what is the role of the "graphical abstract"? it would likely be better as a figure that is referenced in the text to help illustrate the model

5) The manuscript should be carefully re-read to catch typos/grammatical errors e.g. in the abstract "it is composed by four items" should be "it is composed of four items"; and "A longitudinal study was carried with" should be "A longitudinal study was conducted with" etc.

6) has there been any measurement invariance research (longitudinal MI) on the SHS for adolescents? Is that the unique contribution of this study, or is it specifically because it is among a Brazilian adolescent sample?

Authors' response

The reviewers' and managing editor's suggestions were very important for the improvement of the article. We are grateful. The text has been extensively revised. Our responses to the topics addressed are presented below. The changes in the text are highlighted in red font.

Reviewer #1: Thank you for the opportunity to review this paper. The article investigated the psychometric properties of the Subjective Happiness Scale in a large sample of adolescents with 2 years of follow-up. The methods are sound, and the paper needs proper English revision. I have some other comments, listed below:

Abstract:

I believe that there is an "of" missing in the first phrase, "The aim this study". Besides, the methods section of the abstract needs to be revised in order to summarize better the research procedures; authors should explain the SHS first, and then the interview methods.

Response: Thank for your review. The English was revised and the abstract was restructured for better understanding.

Introduction:

Some sentences need to be rewritten; first and last paragraph need extensive correction. Response: The sentence was corrected.

Methods:

Please, clarify if the examinations presented in the "Data collection" were performed in baseline or follow-up or both, and if the methods were the same.

Response: The data collection were performed in the same way in the two collections. The sentence was added in the 1st paragraph of the "The two collections (2012 and 2014) were performed with the same methodological protocol. The data were conducted to measurement of discriminant analysis."

I suggest providing the values of income in US\$ dollar and the equivalence in Brazilian Reais for proper comparison.

Response: It was added the value corresponds in reais. "Household income was collected in Brazilian minimum wage (BMW), which corresponded to US \$450 at the baseline (approximately 1,000 reais)."

There is no mention to skin color or parents education in the methods section.

Response: We apologize, it was a writing error. The variables were excluded from the table 1. Although the authors state that dental caries were assessed through CPOS, the tables present information regarding "Cavited carious lesion".

Response: There was a writing error. Dental caries was evaluated by teeth. The sentence was corrected in "Data collection", 2nd paragraph. "The prevalence of dental caries was collected based on the Decayed, Missing and Filled Teeth index (DMF-T) for permanent teeth. The cavitated carious lesions variable was composed of the decayed component (D >0 component) of the index."

Present the full name of the CPQ11-14 prior to its initials. Besides, Table 3 mention "CPQ11-14 Severity", and the authors should clarify how it is estimated. Response: The full name was included and the table was corrected.

I suggest the authors present the analysis performed in the same order the results are listed, in the body of the article and abstract. Besides, include descriptive analysis. Response: The presented order of results was changed, following the same sequence as the abstract, text and tables

Although the Figure 1 shows the tests performed according to the data collection periods, I suggest the authors describe it briefly in the text.

Response: The sentence was added in "Data analysis", 2nd paragraph. "The internal consistency, discriminant and construct validity were performed with the baseline participants., Reproducibility, convergent validity and longitudinal measurement invariance were performed with the follow-up participants (Figure 1)."

Tables mention that a correction factor for cluster sample were used (sample weights); it should be specified in the methods.

Response: The discriminant validity was analyzed with the correction of the sample weights. The sentence was added in "Data analysis", 4th paragraph. "This analysis taking into account the sampling weight, through the "svy" command"

Results:

The results should explore the follow-up sample and its characteristics, since they are presented in Table 1.

Response: The text was corrected and the sentence was added in 1st paragraph. “In 2014, the characteristics were similar. The mean and standard deviation (SD) of happiness was 5.24 (SD 0.90) in 2012 and 5.38 (SD0.90) in 2014 (Table 1).”

Table 1 presents some typing errors.

Response: The table was revised and corrected.

The title of Table 2 mentions an "effect size" calculation, but the table presents percentages and means.

Response: There was a typing error, the effect size is shown in table 3. The legend was corrected.

Discussion:

The first phrase of discussion does not mention the longitudinal analysis, which is the differential of the paper.

Response: The paragraph was rewritten. “This study evaluated the psychometric proprieties and longitudinal measurement of the SHS in adolescents. In general, the results indicated that the SHS is valid for measuring subjective happiness in Brazilian adolescents, including longitudinal validity across time points. It was demonstrated by the discriminant and convergent validity, confirmatory factorial analysis and measurement invariance.”

For the ICC, authors should explore more the variation sources, especially the adolescence phase.

Response: The sentence has been revised. “The reproducibility value was acceptable (ICC = 0.70), showing a correlation when the SHS was reapplied. Low values for reproducibility have been reported when psychological measurements are applied due to bias and artifacts that are inherent to these scales [9]. The variations in responses are considered normal because they depend on each individual [27], even more than adolescence can be a phase of constant change. However, we cannot deny that the results presented limit values, when the scale was applied over time. One possible explanation is that the issues were poorly understood, and individuals could have been confused when they were answering. Notwithstanding, the possibility of a response shift between the first and second administrations cannot be ruled out. The reproducibility values may also have been affected by the inconsistency of the “shs_d” item or by the complexity of subjective measurement. Furthermore, adolescence is a constant transformation phase, where circumstances can act in daily life, and it happened in a period of weeks or days may have changed the perception of adolescents. “

The satisfaction with life construct could be better explained, in order to allow its comparison with happiness.

Response: The sentence has been rewritten. “Concepts of happiness and satisfaction with life are considered synonyms, representing similar theoretical direction [2], which was confirmed by our results. Still, subjective definitions depend on the individual’s perception of their mood and way of life being related to well-being, where favorable events tend to indicate satisfaction and happier people [2].”

The problems related to item d should be explored and in depth discussed.

Response: The sentence has been reformulated for better understanding.

“This may have been due to the lack of understanding of this item by the participants, or by the fact that the item has inverse sense when compared to the others. Another possible explanation, is the lack cross-cultural validation, or even by the scale not being made for people so young. Furthermore, this item (shs_d) had already presented problems in previous publications [11]. On the other hand, the results performed in 2014 were acceptable. It may be justified by the greatest maturity of adolescents.”

Reviewer #2: The study goal was to evaluate the psychometric properties of the Brazilian version of the subjective happiness scale in adolescents. The study was very well designed; the research question is well defined; the methods appropriate and well described, the results well explicated, and the discussion and conclusions well balanced and adequately supported by the data. However, the paper as a whole, needs to be professionally proofread as there are a number of sentences that need improvement in the English level. I have some minor suggestions.

Abstract:

Check small English mistakes. E.g.: In the sentence "The aim this study" the "of" is missing before "this".

Response: Thank for your review. The English was revised and the abstract was corrected.

Introduction:

Some sentences need to have the English revised. E.g.: Line 51: "However, the scale there was bot assessed..." Line 53: "There was not assessed longitudinal measurement". The sentences mentioned need to be rewritten.

Response: The sentence was corrected “However, the scale there was not assessed by longitudinal measurement.”

Methods:

Study design and sample: "The adolescents were randomly selected in the public schools at city". This sentence needs to be rewritten.

Response: The sentence was rewritten. “The adolescents were randomly selected in the city’s public schools.”

Use abbreviations consistently in the text. There are places in which authors used happiness's scale, whereas in other they employed SHS.

Response: The text has been standardized for the abbreviation “SHS”.

Before using abbreviations, make sure to state their full meaning first. Authors cited CPQ11-14 in line 44 (Subjective measures) without the full name of the instrument.

Response: The full name “Child Perception Questionnaire” has been included.

Discussion:

In the 5th Paragraph authors said "Socioeconomic disadvantages influence oral health outcomes (like happiness) via different pathways..." Is happiness an oral health outcome? Please review the sentence.

Response: There was a typing error, the “(like happiness)” has been removed.

"Furthermore, this item (shs_d) had already presented problems in the version Brazilian scale" Check the English of the sentence.

Response: The sentence was rewritten. "Furthermore, this item (shs_d) had already presented problems in previous publications"

"The result indicates that happiness can be assessing in longitudinal studies among adolescents". Replace "assessing" for "assessed".

Response: The word was corrected.

Reviewer #3:

the association with oral health seems tangential - it is mentioned in the first line of the abstract and then not again at all in the introduction or abstract; perhaps omit that then and make the emphasis about seeking validity evidence for the SHS in adolescence longitudinally? (that is a useful aim in itself as it relates to the study of adolescent quality of life). So either add more context in the intro about the relevance of oral health + the SHS or I would suggest to omit that, and just note that the SHS was collected in a clinical/dental setting incidentally.

Response: Thank for your review. We agree that the focus of the study was to verify the validation of SHS, in this sense the sentence was reformulated. "Happiness is a subjective measurement and validation studies need to be carried out to verify its applicability in cross-sectional and longitudinal studies."

note in the abstract that it was multi-group confirmatory factor analysis

Response: This information has been added in the sentence "...confirmatory factor analysis (CFA), convergent validity and measurement invariance (MI) were performed through the multi-group confirmatory factor analysis."

what is "reproducibility results" referencing? (in the abstract); also, were all children aged 12? maybe include mean at time of administration in the abstract

Response: Reproducibility results represent ICC values, however the sentence has been reformulated for better understanding "Cronbach's alpha and ICC results were moderate (0.51 and 0.70, respectively)."

All participants at the beginning of the study were 12 years old and the follow-up took place after two years, where the participants were on average 14 years old. The age of the participants has been included. "Two years later, 746 adolescents were reassessed, with an average age of 14 years."

what is the role of the "graphical abstract"? it would likely be better as a figure that is referenced in the text to help illustrate the model

Response: We agreed with your comment and accepted your suggestion. The figure was included in the text and removed from the graphical abstract. "Figure 2. Model of the four-item of SHS by confirmatory factorial analysis (CFA)."

The manuscript should be carefully re-read to catch typos/grammatical errors e.g. in the abstract "it is composed by four items" should be "it is composed of four items"; and "A longitudinal study was carried with" should be "A longitudinal study was conducted with" etc.

Response: The sentence has been rewritten.

has there been any measurement invariance research (longitudinal MI) on the SHS for adolescents? Is that the unique contribution of this study, or is it specifically because it is among a Brazilian adolescent sample?

Response: This was the first study to evaluate the longitudinal measurement of SHS in Brazilian adolescents, the other studies focused on transversal validation. Our intention was to carry out the validation in the adolescence phase because many physical and psychological changes occur, which may interfere in the perception of happiness. Therefore, longitudinal measurements were performed to verify if the scale was validated at different times of adolescence.

2nd Editorial decision
25- Dec-2020

Ref.: Ms. No. JCTRes-D-20-00124R1
Psychometric properties and longitudinal measurement invariance of the Brazilian version of the Subjective Happiness Scale in adolescents
Journal of Clinical and Translational Research

Dear author(s),

Reviewers have submitted their critical appraisal of your paper. The reviewers' comments are appended below. Based on their comments and evaluation by the editorial board, your work was FOUND SUITABLE FOR PUBLICATION AFTER MINOR REVISION.

If you decide to revise the work, please itemize the reviewers' comments and provide a point-by-point response to every comment. An exemplary rebuttal letter can be found on at <http://www.jctres.com/en/author-guidelines/> under "Manuscript preparation." Also, please use the track changes function in the original document so that the reviewers can easily verify your responses.

Please note that, as explicitly specified in the author guidelines, the manuscript text must comply with academic English standards before we can publish it. On that note, we kindly ask you to thoroughly proofread the text.

Your revision is due by Jan 24, 2021.

To submit a revision, go to <https://www.editorialmanager.com/jctres/> and log in as an Author. You will see a menu item call Submission Needing Revision. You will find your submission record there.

Yours sincerely,

Michal Heger
Editor-in-Chief
Journal of Clinical and Translational Research

Reviewers' comments:

Reviewer #1: All suggested changes have been included or justified. The article is suitable for publication after some minor grammatical corrections.

Authors' response

We are grateful for the review. English was grammatically revised and the changes are highlighted in red font in the text.

3rd Editorial decision
29-Dec-2020

Ref.: Ms. No. JCTRes-D-20-00124R2
Psychometric properties and longitudinal measurement invariance of the Brazilian version of the Subjective Happiness Scale in adolescents
Journal of Clinical and Translational Research

Dear Dr. Heger,

Reviewers have now commented on your paper. You will see that they are advising that you revise your manuscript. If you are prepared to undertake the work required, I would be pleased to reconsider my decision.

For your guidance, reviewers' comments are appended below.

If you decide to revise the work, please submit a list of changes or a rebuttal against each point which is being raised when you submit the revised manuscript. Also, please ensure that the track changes function is switched on when implementing the revisions. This enables the reviewers to rapidly verify all changes made.

Your revision is due by Jan 28, 2021.

To submit a revision, go to <https://www.editorialmanager.com/jctres/> and log in as an Author. You will see a menu item call Submission Needing Revision. You will find your submission record there.

Yours sincerely

Michal Heger
Editor-in-Chief
Journal of Clinical and Translational Research

Reviewers' comments:

Dear authors,

Thank you for submitting a revised version of your manuscript.

I have carefully read through your paper and concluded that the text requires another series of English spelling and grammar upgrades to conform to academic level English.

The abstract alone contains numerous errors:

- (Cronbach's alpha - α) -> why use the Greek letter abbreviation if you choose to write it out in full later in the abstract?
- ...correlation coefficient -ICC) -> there should be a space between dash and ICC
- ...moderate (0.51 and 0.70, respectively) . -> no space before period
- ...through cross-section and longitudinal studies -> should read through

Please engage a native speaker, a third-party service provider, or a JCTR staff member to help with the language if you think this is necessary. It is imperative that we prevent going back and forth because of an inadequately written paper, so this issue should be addressed effectively.

Thank you and happy New Year!

Michal Heger
Editor

Authors' response

We are grateful for the opportunity to respond. The manuscript has been corrected and revised by third-party service provider.

3th Editorial decision
23-Jan-2021

Ref.: Ms. No. JCTRes-D-20-00124R3
Psychometric properties and longitudinal measurement invariance of the Brazilian version of the Subjective Happiness Scale in adolescents
Journal of Clinical and Translational Research

Dear author(s),

Reviewers have submitted their critical appraisal of your paper. The reviewers' comments are appended below. Based on their comments and evaluation by the editorial board, your work was FOUND SUITABLE FOR PUBLICATION AFTER MINOR REVISION.

If you decide to revise the work, please itemize the reviewers' comments and provide a point-by-point response to every comment. An exemplary rebuttal letter can be found on at <http://www.jctres.com/en/author-guidelines/> under "Manuscript preparation." Also, please use the track changes function in the original document so that the reviewers can easily verify your responses.

Your revision is due by Feb 22, 2021.

To submit a revision, go to <https://www.editorialmanager.com/jctres/> and log in as an Author. You will see a menu item call Submission Needing Revision. You will find your submission record there.

Yours sincerely,

Michal Heger
Editor-in-Chief
Journal of Clinical and Translational Research

Reviewers' comments:

Dear authors,

Thank you for submitting the revised draft.

You have indicated that the manuscript was submitted for proofreading by a paid service, but the service was rather poor. I have gone through the paper and indicated syntax, grammar, and spelling errors in yellow on the first page (Introduction). The document is attached to the decision letter.

Please revise your paper accordingly and in line with our journal policy. We are up for indexation at Clarivate Analytics WoS SCI, which will provide the journal with an impact factor. We passed through other vetting processes without issues (e.g., PubMed) because of the high quality of the published papers, so I would like to continue running the journal along that philosophical approach. Proper linguistics are important for that and important in science in and of themselves.

Thank you and kindest regards,

Michal.

There is additional documentation related to this decision letter. To access the file(s), please click the link below. You may also login to the system and click the 'View Attachments' link in the Action column.

4th Editorial decision
02-Feb-2021

Ref.: Ms. No. JCTRes-D-20-00124R4
Psychometric properties and longitudinal measurement invariance of the Brazilian version of the Subjective Happiness Scale in adolescents
Journal of Clinical and Translational Research

Dear authors,

I am pleased to inform you that your manuscript has been accepted for publication in the Journal of Clinical and Translational Research.

You will receive the proofs of your article shortly, which we kindly ask you to thoroughly review for any errors.

Thank you for submitting your work to JCTR.

Kindest regards,

Journal of Clinical and Translational Research
Peer review process file 07.202102.004



Michal Heger
Editor-in-Chief
Journal of Clinical and Translational Research

Comments from the editors and reviewers: