

Editor in Chief

Peer J

Dear professor Tsung-Min Hung:

Again! We would like to thank the journal offering us another opportunity to submit our third revised version of our manuscript “Psychometric properties of the perceived stress scale (PSS): measurement invariance between athletes and non-athletes and construct validity”. Two reviewers have given lots of valuable and constructive comments and suggestions on the last version. Their careful efforts, along with our revising, I believe it will make this paper better and better. The third revision followed all of your recommendations and addressed all the major concerns that were raised by reviewers. Again, before submitting the third revised version, we used “Grammarly” software to check our spellings and grammar, and our references in the text in order to guarantee its quality. Below, we explain, point by point, how we have incorporated the issues raised by the reviewers. Also, to ease understanding, we have included the reviewer’s comments in italics followed by our responses.

Reviewer 1

Basic reporting

1) Clear, unambiguous, professional English language used throughout.

Overall this study is clear, but some grammatical or structural written errors, inappropriate punctuation marks, and typo are still needed to be revised to enhance the quality of this manuscript. Please take time to proofread the entire manuscript. At least, some inappropriate sentences are found as follows.

Line 109-113: However, when researchers continually examined the psychometric properties of PSS (e.g., Barbosa-Leiker, et al., 2013; Cohen & William, 1988; Hewitt, et al., 1992; Ramírez & Hernández, 2007) “the items, the factorial structure, and the reliability of PSS becoming a hot issue about PSS”. Especially, researchers

concerned “bout” whether 2-factor 10-PSS or 14-PSS can be an ideal tool in assessing perceived stress.

Reply: Thanks for the comments. Indeed, we have found several grammatical/written and punctuation errors. The original sentence was incomplete. Now we have revised it on line 120-122. Also, we found we lost “a” on “about” on line 122. We apologize!

Line 167-169: “As previously mentioned, although sports researchers used either PSS-10 or PSS-14 in examining their relationships with athletic burnout or injury. The psychometric properties of PSS have never been examined in sports, Thus, there are several questions remained.”

Reply: Thanks for the comments. The original sentence was incomplete and used wrong punctuations. Now we have combined the first clause and second clause together to make a complete sentence and correct wrong punctuation on line 184-187.

Line 195-196: They participated (in) our study voluntarily without any conditional requirements from the classes.

Reply: Thank you for the reminding. We dropped a preposition “in” between “participated” and “our.” Now we have added it on line 217. Thank you!

Line 214-215: The PSS ” measures ” is a self-report measure designed to assess one’s perception about the degree of a given situation in daily life is considered stressful (Cohen et al., 1983).

Reply: Thank you for the reminding. The original words “measures” is redundant. Now we have deleted it on line 237.

Line 400: Past research in sports generally just “assessing” life stressors (e.g., CSALSS, DALDA, LESCA) or arbitrarily used PSS-14/PSS-10 in examining the relationship between stress and related psychological responses (e.g., Raedeke & Smith,2004; Smith, Gustafsson, and Hassmén,2010; Gustafsson & Skoog,2012).

Reply: Thank you for the comments. It was a grammatical error. Now we have replaced “assessed” on line 444.

2) *Intro & background to show context.*

In the revised manuscript, the authors have emphasized the existing knowledge gaps of research regarding the measurement of athletes’ stress perception. The importance of this study has been illustrated.

Reply: Thank you for the comments!

3) *Literature well referenced & relevant.*

Literature has been well-referenced and relevant.

Reply: Thank you for the comments!

4) *Structure conforms to PeerJ standard, discipline norm, or improved for clarity.*

The structure of the manuscript conforms to the standard of the PeerJ and the norm of relevant disciplines.

Reply: Thank you for the comments!

5) *Figures are relevant, high quality, well-labelled & described.*

Tables are relevant that help readers realize the relationships among the variables, and the results of competing different models. The titles of Table 1 and 2 are sort of inappropriate and recommended to be refined. For example, Table 1: The comparing table of PSS one-factor -model and two-factor- model. The title is suggested that “Fit indices for one-factor and two-factor models of the PSS.” Please attempt to give the tables brief but clear titles.

Reply: Thank you for the comments and suggestions! On table 1, we have revised the title as you suggested on table 1. As table 2, we refer Barbosa-Leiker et al., (2013) and change it as **“Invariance models of the two-factor PSS-10 between athletes**

and non-athletes” on table 2. Please give us comment and suggestion again. Thank you!

Experimental design

1) *Original primary research within Scope of the journal.*

The purpose of this study falls within the scope of the journal, which is to examine the validity of the Perceived Stress Scale within the sport realm and investigate its associations with athlete burnout and student-athletes' life stress.

Reply: Thank you for the comments!

2) *Research question well defined, relevant & meaningful. It is stated how research fills an identified knowledge gap.*

The authors have added some information regarding the measurement of athletes' stress, and further argued the existing knowledge gaps and how this study could solve these questions.

Reply: Thank you for the comments!

3) *Rigorous investigation performed to a high technical & ethical standard.*

This study is well designed and also follows the ethical standard to claim the approval of the IRB while recruiting athletes and non-athletes as the participants.

Reply: Thank you for the comments!

4) *Methods described with sufficient detail & information to replicate.*

The materials and methods described in the manuscript are moderately sufficient for other researchers to replicate.

Reply: Thank you for the comments!

Validity of the findings

1) *Negative/inconclusive results accepted.*

In general, all relationships among the PSS, athlete burnout, and life stress were statistically significant, which were mostly consistent with the previous findings.

Reply: Thank you for the comments!

2) Data is robust, statistically sound, & controlled.

The data provided is robust enough because this study utilized a three-stage design with different samples to examine the construct validity of the PSS via CFA, and to investigate the discriminant and convergent validity, and re-test reliability of the PSS.

Reply: Thank you for the comments!

4) Conclusion well stated, linked to original research question & limited to supporting results.

The conclusion is appropriately stated based on the results of this study and the findings of previous research.

Reply: Thank you for the comments!

Comments for the author

The findings of this study contribute to the application of assessing athletes' stress. Some minor revisions of writing are suggested for improving the quality of this manuscript.

Reply: Thank you for the comments and suggestions!

Reviewer 2

Basic reporting

No Comments

Experimental design

No Comments

Validity of the findings

No Comments

Comments for the author

The authors have revised the article based on the previous review comments. First, this article conducted a cross-validation study for multi samples which is a popular strategy for model stability and validity extension. Second, the authors already reported the test retest reliability for the internal-consistency reliability. However, I suggest that authors add McCrae (2014) and McCrae, Kurtz, Yamagata, and Terracciano (2011) literature as citation during recent 5 years. Finally, I would like to see much more discussion or suggestion on the validity generalization for the psychometric properties of the perceived stress scale (PSS).

Reply: Thank you for the suggestions! We forget it. Now we have added both literatures on line 405-407 and on line 667-673.

As to your suggestion about “*much more discussion or suggestion on the validity generalization for the psychometric properties of the perceived stress scale (PSS)*”, we have added a paragraph to discuss this issue on line 510-523.