Reviewer’s report

Title: Factor structure and psychometric properties of the Trier Inventory for Chronic Stress (TICS) in a representative cross-sectional German survey

Version: 2 Date: 24 November 2011

Reviewer: Donald Sharpe

Reviewer’s report:

I have had the opportunity to again review “Factor structure and psychometric properties of the Trier Inventory for Chronic Stress (TICS) in a cross-sectional, representative German survey”. The authors have made a sincere effort to address the concerns I raised previously. Below are some major concerns that remain as well as minor issues relating to phrasing and also some puzzling statements.

Major Compulsory Revisions
(page, line --- SORRY, there are too many corrections to list by paragraph so I used page numbers)

4,12 but elsewhere. When you speak to a two-factor model based on the sum scores of the nine scales, I’m not sure what that would look like as a CFA? You sum the scores for the nine scales, you get nine sums, and then --- you factor analyzes those nine sums to obtain two factors? Is this some sort of parceling?

9.19 but elsewhere. Model fit is arguably not acceptable for any of the three models. It is argued in the discussion (12.23) that the nine factor model resulted in unacceptable to good fit. Well, a judgment has to be made, did the nine-factor model fit or not? I would say not although the authors awkwardly describe it as “partially impaired model fit” (14.,18) and suggest the issue is the nine factors and the questionnaire data, and state goodness of fit is for comparison between models rather than judging model fit itself. The authors chose to do CFA --- CFA is confirmatory and sets a very high standard. If that standard is not met, then I don’t think the authors can call that a limitation. And it is not appropriate in my mind to say one model is better than another model if both models have poor fit to the data. There are an infinite number of models --- so what if one model fits better than another if neither model is adequate?

9.13 I do not understand how testing three scales (or nine scales) for gender differences results in ONE F value (the 8.326) --- ditto age groups. Maybe that is a MANOVA? But if so, I’m not understanding how one would then know which specific scales differed. Tukey is mentioned in Table 3 but whatever was done should be described in the paper, not in a table. Results are presented in tables, not how analyses are done.

13.10 What evidence is there for androgens and stress hormones as the possible source of the sex differences? This seems very speculative.

Minor Essential Revisions
1, 2 cross-sectional German SAMPLE (see also 4, 10)
1, 8 report ITS psychometric properties
1, 9 age on CHRONIC stress
1, 14 delete [of emerged models and a combined model] --- I'm not sure readers will understand these terms
1, 16 delete [resembling the published factor structures]
1, 17 Very confusing to write CFA resulted in “unacceptable, acceptable, and good fits for all models”. That statement tells the reader nothing.
1, 19 Most FACTORS WERE moderately to highly
1.21 “differing factor structures”? From what?
1, 23 The proposed NINE-FACTOR structure IS FACTORIALLY VALID (I do not understand how one study can show a factor structure is reliable)
1, 24 You can’t say that you support the nine-factor structure but also a two-factor structure based on my understanding of your results.
3, 9 There is one concept of chronic stress I think --- not concepts.
3, 15 I’m not familiar with the systemic requirement – resource model of health --- can you say something to explain what that is? See also 4, 2
3, 23 When you says the TICS is the “first instrument that explicitly captures chronic psychosocial stress within nine dimensions”, are you saying that the TICS is the first instrument that captures chronic psychosocial stress or the first instrument to capture chronic psychosocial stress with nine dimensions? And by dimensions, I think you mean factors. Please be consistent --- factors, dimensions, scales. I think the term you want to use is factor.
3, 25 A global chronic… not “the"
4, 8 Doesn’t mean much to say it is unclear whether the factor structure can be replicated using a representative sample if you do not explain spell out the non-representative samples used in previous studies?
4, 10 delete [cross-sectional] I’m not sure I understand what is meant here by cross-sectional? How can a sample be representative and NOT cross-sectional?
4, 13 two-FACTOR model
4, 14 tested THE NINE-FACTOR model --- I don’t know why that model is “advanced”?
4, 15 a model that might result in EVEN BETTER model fit.
4, 22 only partially [20]. Delete the last sentence --- I’m not sure what you’re trying to say.
5, 3 conducted BY THE USUMA (I don’t know what “within a representative” means) and what is USUMA?
5,6 Is it not possible to explain random-route sampling more clearly --- I'm not sure I would know what to do to replicate your random-route sampling based on what is written here.

5, 9 How does comparing to information from the Federal Statistical Office “in order to arrive at a truly representative sample”?

5,15 FINAL sample of N = 2,339

5,27 What do you mean by “interrelated dimensions”? Do you mean factors?

6,3, 6,6, 6,7 I don’t understand items that start “Times when…” --- the other statements are self-contained (e.g., “I must frequently care for the well-being of others”).

6.9 A NON-SPECIFIC chronic…

6,12 in a PREVIOUS EFA SOLUTION (not sure why unrotated is there?)

6,26 EACH PROCEDURE … No STATISTICALLY significant differences WERE FOUND THROUGH an ANOVA corrected for UNEQUAL variances between the TWO SAMPLES for all …

7, 7 “as all items tended to measure stress in related stress domains”. --- delete?

7,10 items WITH CROSS-LOADINGS --- significant doesn’t play a role here. As well, things would have been much cleaner if you had picked .40 rather than .30?

7,13 USING Mplus 5,1, … were tested USING CFAS.

7,16 THE SATORRA-BENTLER --- not “so-called”

7.17 account for THE NON-NORMALITY of the data. For the evaluation of model FIT (not fits)

7.19 Remove the thresholds from the table and report in the body of the paper.

7.22 reporting the descriptive fit indices. (no differences).

7.24 Not sure why Cohen’s d is being described.

8.3 I do not understand the statement around the percentages.

8.14 You addressed this in your response to one of the reviewers --- but isn’t the traditional cut-off 1.00?

8.16 “is as not flexible enough” --- wording isn’t correct and I don’t understand what is meant.

8.17 well-known?

8.26 “which might have been the” --- delete, I don’t understand

8.27 “of these shortcomings” --- ?

9.2 M = .30 is the mean factor correlation? Why test that for statistical significance?

9.9 Again, why “advanced”?

9.12 delete “published”

9.13 had not have
9.19 unacceptable FIT not fits. The word here is odd. What you’re saying I think is that by some criteria fit was acceptable, but for some criteria fit was not?
10.5 equivalent BY gender and BY age.
10.18 “meaningless sizes” --- are you saying the effect sizes are small?
12.19 “remarkable residual variances” --- I do not understand?
12.24 resulted in UNACCEPTABLE to good fit…
15.6 I do not understand this paragraph.

Figure 1 adds nothing.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare I have no competing interests.