Reviewer’s report

Title: Factors Associated With Persistent Posttraumatic Stress Disorder Among U.S. Military Service Members and Veterans

Version: 0 Date: 20 Jun 2017

Reviewer: Jeremiah Schumm

Reviewer’s report:

This is a review of the manuscript entitled "Factors Associated with Persistent Posttraumatic Stress Disorder among U.S. Military Service Members and Veterans". The study has notable strengths, including its topical focus, large sample size, longitudinal design, and use of validated measures. However, I note questions and weaknesses below that reduce its potential impact. Most of these involve the statistical approach and conclusions that were drawn from the findings.

1. I was not clear from reading the abstract about the time between the assessment points. This was also hard to follow in the method section. It is not until the first paragraph of the discussion that the number of years between assessments is clearly stated.

2. A citation is needed for the PCL-C on page 6. This section should also indicate what numeric value corresponds to "moderate" on the PCL-C, since that was used as the cut off for each item.

3. What is the reference source cited for the PCL-C? The cited reference (30) doesn't indicate whether this is a published reference or the conference presentation on this instrument, which has been commonly cited.

4. The reference to the "five PHQ items" on page 8 requires a citation.

5. Why was p < .20 chosen as the cut off for including variables in the multivariate model? Also, why was > 10% selected to determine change in the odds ratios? Are there citations to support these statistical cut values?

6. The text on page 10 states that p < .05 was used to determine significance for bivariate comparisons. However, Table 1 and 2 notes state that p < .10 was used. The authors should use the former and correct their models to reflect this. Using a p < .10 to determine statistical significance is not conventional and increases changes at spurious results, particularly with such a large sample. In Table 1, it would be helpful to indicate which group is significantly different from the reference group for comparisons that involve more than 2 categories. I also suggest reporting exact p values, perhaps by adding an additional column following the 95% CI.

7. What was the reason for using incremental increases on the PCL-S but not on other measures (e.g., PHQ-9)? Also, why were 10 point increments on the PCL-S chosen?
Collapsing variables into categorical predictors may be easier to translate but have some statistical disadvantages over keeping variables as continuous predictors.

8. Several variables in Table 2 have OR 95% CI values that are outside of 1.0, yet they are not indicated as being statistically significant. I was confused by this, since I would assume that OR that do not include 1.0 within the 95% CI should be statistically significant.

9. It would be interesting and important to also understand what factors predict transitioning from having PTSD at baseline to not having PTSD at the first follow-up and transitioning from having PTSD at the first follow-up to not having PTSD at the second follow-up. This would provide information about factors that are related to reduction of PTSD over time, rather than only focusing on who retains the disorder.

10. The authors claim in the discussion that the findings showed that combat exposure was one of the strongest predictors of persistent PTSD. However, it doesn't appear that assertion was statistically tested (i.e., the effect sizes of each predictor with PTSD were not statistically compared to one another to know this).

11. I didn't follow the rationale on page 11 that service members who were healthy are more likely to deploy, and this explained the relationship between combat intensity and PTSD.

12. I didn't follow the first full sentence on page 12. Potential mechanisms to explain what?

13. The discussion asserts that the sample might not be representative of the population but then appears to contradict this assertion in the next sentence on page 13.

14. The finding that there was high consistency across time periods does not negative the possibility that recall bias still exists (as noted on page 13). Individuals could be consistently inaccurate across time periods and exhibit recall bias in reporting retrospectively.

15. Why would the length of time between the time periods prohibit the investigators from looking at fluctuations in PTSD symptoms over time (see page 14(1? There are multiple time periods, so regardless of the timing of the follow-up periods, the data still allow them to investigate fluctuation in PTSD symptoms across time.

16. The authors mention missing data as a limitation in the discussion. This should be noted in the results section, and the method for addressing missing data should be described. The assertion that the missing data did not impact the results seems purely speculative and contradicted by the finding that missing data was associated with several covariates.

**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.

No

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