Reviewer’s report

Title: Evaluating a Screener to Quantify PTSD Risk Using Emergency Care Information: A Proof of Concept Study

Version: 0 Date: 03 Aug 2019

Reviewer: Julie C. Leonard

Reviewer's report:

General: The important long-term goal of this line of research is to develop a tool that predicts risk of PTSD in the immediate post injury period in order to ultimately define a cohort for a stepped intervention to prevent the development of PTSD. The investigators pool existing data from five prior studies to investigate the predictive ability of the Peri-traumatic Dissociative Experiences Questionnaire (PDEQ) for PTSD at 30-60 days.

Comments to the Authors

Analyses:
1. The data is confounded by 3 very important predictors for risk of PTSD: Sex, history of interpersonal violence, and mechanism of interpersonal violence. The investigators report adjusted models to explore the effects of including these variables in their modeling, and they are significant in nearly all modeling scenarios. Further, the Brier Skill Score suggests that the proposed models do not perform all that better than a naïve model. What is not provided is analysis that evaluates how well these three variables alone predict future PTSD within the pooled cohort? Please provide.
2. In effect, this study is a meta-analysis and should follow Meta-Analysis Reporting Standards. I2 should not be the only measure of heterogeneity reported. Please provide greater detail regarding the pooled studies and a box plot for the observed effects of each study.

Results:
3. As a clinician, it is important to understand what percent of the population would score above a pre-defined PDEQ or a risk threshold for the model AND the test characteristics (Sensitivity, Specificity, NPV, PPV) of potentially using that score or threshold to direct patients to a stepped intervention. This information is not provided, except for an online calculator that provides a risk of PTSD for an individual subject and Table 4, which also only provides individual risk estimates. Please provide a better Figure legend for Table 4. Please provide performance characteristics for your model, if used as a tool to screen the patient population for PTSD.

Discussion:
4. The Brier Skill Score suggest that the proposed models do not add much predictive probability. Please discuss.
5. The Discussion is more about limitations (which are all valid) than about contributions to our knowledge. The authors should consider discussing more thoroughly the importance of their findings and how their findings compare to other proposed tools for screening for PTSD in the emergency setting such as PsySTART.
6. Importantly, the PDEQ's focuses on depersonalization, which is really one risk factor. They should entertain how this relates to the timing of the administration of the PDEQ relative to CAPS (PDEQ became less predictive the further out the CAPS was administered) AND how it relates to DSM-V, that removed language stipulating an individual's emotional response because that criterion
proved to have no utility in predicting the onset of PTSD. Please discuss.

7. Implementing the PDEQ in the ED will have its challenges. The PDEQ was administered in a study context and the median time to administration was 9 days, not the day of the trauma event. In the ED setting, these questions would be intrusive, as the patients will be undergoing other stressful events during evaluation and treatment. Additionally, it is unclear how well questions regarding depersonalization of the event would perform within hours of the event, when the patient has had little time to process the situation. Please discuss.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**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 recommend additional statistical review

**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 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