Reviewer’s report

Title: Machine Learning Methods to Predict Child Posttraumatic Stress: A Proof of Concept Study

Version: 0 Date: 03 Nov 2016

Reviewer: Grete Dyb

Reviewer’s report:

Dear authors,

I have read the paper with interest. It is a well written paper on an important topic. We still need much more information about PTSD in children and the novel method may add to this aim.

Due to my limited knowledge to the novel methods applied in this study, I have disclosed to the editor that I will limit my review comments and avoid comments on the statistical methods applied.

Risk factors for PTSD are important to identify for prevention of PTSD and designing health services for children in need for intervention. In this study the authors use a broad range of data from the clinics (not specifically collected to this purpose) to test if a new statistical method can contribute to identify the risk of PTSD in injured children discharged from hospital. As a scientific experiment, I do not have any objections to the aims. However, I must add that I think time consuming and extensive methods to identify risk factors in a clinical sample have some limitations.

You may say, and I think the authors agree, that children in risk of PTSD after an acute injury should always be provided necessary care after discharge. Well-informed clinicians should evaluate PTSD and provide treatment when needed. How can risk profiles inform this process? What are the limitations? I would appreciate the authors comments on this issue.

The question is if risk assessments in an early phase can provide information accurate enough to inform health care and select patients for follow up after discharge. I fear these kinds of risk assessments would be used to limit the resources for children in need of health care.

How much information about the children (variables) would be needed to know enough to get accurate results? How much time would that take to gather, store and analyze? The cost-benefit could have been commented?

The list of variables: Would breast feeding be a variable you would count on in this decision? What is such a variable proxy for? Education? Mother’s health? Access to health care? Family financial situation?
Papers presenting novel methods tend to evoke suspicion and negative reviews. I would like to underline that the authors have done an extensive work and the methods deserve to be reviewed by a competent statistician.

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

Unable to assess

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Unable to assess

**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

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