Reviewer’s report

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

Version: 0 Date: 16 Jul 2016

Reviewer: Richard Rowe

Reviewer’s report:

This paper examines the application of machine learning to the prediction of PTSD in children hospitalised for an injury. The sample included 138 children of whom 11 (7%) later developed ptsd.

I have very little prior experience of Machine Learning, so I cannot comment on the details of the method. In my opinion the ms has a number of strengths. The topic addressed is important; improving prediction of which injured children will go onto suffer ptsd is an important clinical issue. The method applied appears state of the art, although I am not sufficiently knowledgeable in the field to confirm this. The paper is well written for a reader inexperienced in these methods.

As someone much more familiar with GLM approaches, I would find it instructive to compare the results of the ML analysis to a GLM approach to predicting PTSD. I am not sure if the authors are able to provide this.

I would like a few details of the measures taken - both those that do and do not contribute to the final model. I looks like these might be named in a figure - it would be helpful to refer the reader to look at this to see what has been measured. I think some coverage of the risk factors would also be helpful in the introduction. Were they chosen to cover the risk factors identified in the literature on PTSD? Are there any important predictors from the PTSD literature missing? Were there also some variables "thrown in" simply because they were available?

There are some links made between the identified variables and the existing literature in the discussion, but I would prefer to see more details here. For example, Are prior externalising symptoms a previously documented risk factor?

Minor comment

Lines 65-67 I don't think there is any need to mention the awards won by the pioneers of ML - traditional citation is sufficient.

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.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
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I recommend additional statistical review

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