Reviewer's report

Title: The development of a brief screener for autism using item response theory

Version: 0 Date: 09 Jan 2019

Reviewer: Emma Sciberras

Reviewer's report:

Thank you for the opportunity to review this paper. The paper examines an interesting and important topic and is generally clear in its presentation. The paper provides data to support the use of a 4-item ASD screener. The availability of such a short screener would no doubt be useful in clinical, as well as research settings.

My main difficulty with the manuscript as it stands is that little attention is given to the fact that this screener was administered at age 9, an age at which is long after ASD identification is recommended to occur. The fact that previous validity was stronger than predictive validity to me suggests that these 4 items are perhaps the ones that continue to be important for children with ASD as they progress through childhood. This study is unable to suggest that these are the best items to be used in toddlerhood or earlier in childhood for screening ASD as the A-TAC was not administered at these developmental time points. Also the fair predictive validity suggests that the short form may not be a particularly useful screener from age 9 on. The discussion of the manuscript needs to pay attention to this issue and be clearer about the recommendations that can be made based on only administering this scale in such a narrow age range and limited evidence for predictive validity.

The age for which the A-TAC is validated and the time period which is used to rate symptoms should be clearer.
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

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