Reviewer's report

Title: Enhanced cognitive processing by viewing snakes in children with autism spectrum disorder. A preliminary study

Version: 1 Date: 09 Jul 2019

Reviewer: Lai-Sang Iao

Reviewer's report:

The study investigated whether fear had an enhancing effect on cognitive processing in children with ASD. However, it is not clear why it is necessary to examine this research question. Paragraph 2 of Background is trying to link the issue from typically developing individuals to individuals with ASD. However, it is not clear and rather confusing. To be more specific, Line 72-74 does not seem to fit in the paragraph given that the whole paragraph is about emotional information and Line 77-83 is inconsistent with earlier sentences in the paragraph. The paragraph starts with the claim that emotional information is not processed by individuals with ASD but then it moves to "increased fears are frequently observed" and "fear response is more extreme in ASD children" without a logical flow. Without a logical review of the literature, it is also not clear why authors would expect "a higher (enhancing) effect on cognitive processing in ASD children (than children without ASD)."

Regarding Method, 10 children per group seems quite small. More importantly, children with and without ASD were not matched on neither verbal nor non-verbal IQ. If a matched sample were used, children with ASD may not show a similar pattern of findings as the controls. This also have an impact on the interpretation of the findings. Key pressing was specified on right hand only. It raises a concern if participants were left-handed and reaction time would be affected.

Given that the results did not seem to support the hypothesis stated in Introduction (no higher/enhancing effect on cognitive processing in ASD children when compared to children without ASD), there should be an explanation of why the results were not as expected in the Discussion. Brief limitations are presented in Conclusion. They would be clearer if they were incorporated in the Discussion and spelled out how they would have affected the findings. As mentioned earlier, authors should consider the impact of the two groups being not matched on verbal and non-verbal IQ in the Discussion.

Minor issues:
Abstract -
Line 33 would be clearer if "participants were asked to indicate the color..." is added. If that would go over the word limit for an abstract, authors may consider re-writing the whole sentence and/or the abstract.
Background -
Line 85 I am not sure what "wan" means
Method -
Line 136 Range would read clearer if it is put as 70-116

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.

No

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?
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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