Reviewer’s report

Title: Vocal and Motor Behaviors as a Possible Expression of Gastrointestinal Problems in Preschoolers with Autism Spectrum Disorder

Version: 0 Date: 02 Sep 2019

Reviewer: Leonardo Zoccante

Reviewer's report:

PARTICIPANTS: In regard to the demographic data of the sample of subjects studied, I believe that the age range examined by the authors, namely the pre-school age group with an average age value of 4 years, is actually the most representative for studying gastro-intestinal problems in the Autism Spectrum Disorder. In fact it is precisely the age group in which these problems, also based on my clinical experience, are mostly reported by families.

INSTRUMENTS: It might be useful to compare the results obtained in the ABQ questionnaire, and the modality of expressing abdominal discomfort in the sample of ASD subjects, with what would instead occur in another age-sex matched group of controls. In this way a comparison could be possible, not only between the results of ASD with or without gastro-intestinal disorders or between the results of ASD with verbal or non-verbal profile, but also between the group of cases (subjects with diagnosis) and a group of healthy controls (without diagnosis), as is usually the case in case-control studies. In fact, this would allow the reader to understand what would be the expected result in the administration of the ABQ questionnaire to the healthy preschool general population. However, in the context of this work, it is possible to consider the group of ASD subjects without gastrointestinal disorders and, secondly, the group of verbal ASD subjects, as "control" groups for the group of ASD with gastrointestinal disorders and the group of non-verbal ASD, respectively, and then carry out the research work as a case-control study. Anyway, a reference to the possibility of a future comparison between the obtained results with those obtained from a possible new group of healthy subjects recruited for this purpose and belonging to the same preschool age group could be included in the discussion or within the limits of the study.

INSTRUMENTS: To increase specificity in the subdivision method between verbal and non-verbal groups, given the very young age of the subjects and the fact that some of them could develop language skills at an older age, it would be useful to consider the results of additional diagnostic tests such as Griffith's other than just the ADOS.

RESULTS: Having a number of subjects as equal as possible between each group and a homogeneous sex-age distribution are crucial factors. If, on one hand, the results of this study did not differ significantly in terms of gender of the sample (M or F), on the other hand it cannot be excluded that an important numerical disparity between the two groups could represent a bias.
during the interpretation of the results. In fact, it tends to emerge when subjects with gastrointestinal problems are compared with subjects without such problems, because in this case the number of subjects in the second group (55) is almost double compared to the first one (30). This does not occur when comparing verbal subjects and non-verbal subjects, as they are more evenly distributed (39 vs 46). With such a high disparity between groups it would be advisable to take them into account for the purposes of analysis or, at least, to refer to it in the discussion of the data when considering the potential confounding factors that may have exerted a bias effect on the results obtained.

STATISTICAL ANALYSIS AND DISCUSSION: CBCL scores were reported to initially describe the sample of enrolled subjects: in my clinical experience, the CBCL scale is a useful clinical tool to better understand the neurofunctional profiles and detect internalizing and externalizing problems. Although the Authors focus on the atypical manifestations shown by some subjects as compared to those typically observed in ASD, in order to correctly interpret the data it is recommended to consider the influence of having more internalizing or more externalizing problems on the subject's expression of abdominal discomfort. It would therefore be appropriate to either extend statistical analysis to these CBCL scores when discussing the results, or to report this as a limit of the study when possible confounding factors and bias are mentioned.

The major contribution this work offers is, in my opinion, the correlation between visceral conditions and atypical ASD related manifestations.

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?
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 that I have 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