Reviewer’s report

Title: Relationship between segmental trunk control and gross motor development in typically developing infants aged from 4 to 12 months: a pilot study

Version: 2 Date: 23 Jul 2019

Reviewer: Reviewer 2

Reviewer's report:

PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses one or several testable research questions? (Brief or other article types: is there a clear objective?)

Yes - there is a clear objective

DESIGN - Is the current approach (including controls and analysis protocols) appropriate for the objective?

No - there are minor issues

EXECUTION - Are the experiments and analyses performed with sufficient technical rigor to allow confidence in the results?

No - there are minor issues

STATISTICS - Is the use of statistics in the manuscript appropriate?

No - there are issues with the statistics in the study

INTERPRETATION - Is the current interpretation/discussion of the results reasonable and not overstated?

No - there are minor issues
OVERALL MANUSCRIPT POTENTIAL - Has the author addressed your concerns sufficiently for you to now recommend the work as a technically sound contribution? If not, can further revisions be made to make the work technically sound?

Probably - with minor revisions

PEER REVIEWER COMMENTS:

GENERAL COMMENTS: The authors responded to every question that the reviewer raised and made changes to reflect their responses in the manuscript itself. Although the authors responded to every question, the statistical analysis is still unclear, and the summary of results does not accurately reflect what is listed in Table 1.

REQUESTED REVISIONS:

The argument of static/active/reactive trunk control is not repeated measure (page 10, line 58 to page 11, line 12) is incorrect. By definition, repeated measures involves multiple measures of the same variable (e.g. trunk control) on the same subjects under different conditions (e.g. static/active/reactive). Please delete these statements. However, the authors can argue that they would like to know the relationship between gross motor development and different aspect of trunk control, therefore they examine correlation between gross motor and trunk control (e.g. static/active/reactive) separately. Suggested statement: Because we are interested in the relationships between different aspects of trunk control and gross motor development, we examined the relationship for each aspect of trunk control separately. Specifically, the SATCo scores and the sub- and total scores of the AIMS ....

The reviewer can't understand why p value is adjusted for 9 repeated measures per infant (page 11, line 24). There are 3 aspects of trunk control (static/active/reactive) and 4 sub- scores for AIMS (prone/supine/sit/stand, 5 if total score included in the adjustment). Isn't the adjustment should be based on 12 repeated measures?

In the result section, the authors should specify what aspect(s) of trunk control (static/active/reactive) is(are) significantly associated with gross motor development. It seems that gross motor development is significantly associated mainly with active trunk control at 8 month old, while gross motor development is significantly associated mainly with static trunk control.

There are many statements like (all p ≤ 0.006, Table 1). These statements are confusing. If the authors are referring to those significant correlations, then the authors do not have to make this (all p ≤ 0.006, Table 1) statement again because it is already stated in your statistic method. One example that confuses the reviewer is page 12, line 14. .... Mainly seen from 8 months of age onwards (all p ≤ 0.006, Table 1). This reads like all correlations after 8 month are with p ≤ 0.006.
In discussion, the authors stated "Our discussion on the correlation between the trunk control status and gross motor development focuses on the gross motor skills in each of the four testing positions in the AIMS, rather than referring to the total AIMS score. The total AIMS score, being the sum of the four sub-scores, is not a valid dependent variable." If the main objective is to examine trunk control and gross motor development in each testing position, then the reviewer suggests to state this upfront in the objective section, modify your statistical approach accordingly (i.e., 3 aspects of trunk control and 4 sub-scores of AIMS, with p value adjustment based on 12 repeated measures), and delete the results of total AIMS score from Table 1.

**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.

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 am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable
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