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: 0 Date: 26 Feb 2019

Reviewer: Reviewer 2

Reviewer's report:

PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses a testable research question(s) (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 major issues

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

No - there are major 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 major issues
OVERALL MANUSCRIPT POTENTIAL - Is the current version of this work technically sound?
If not, can revisions be made to make the work technically sound?

Maybe - with major revisions

PEER REVIEWER COMMENTS:

GENERAL COMMENTS: * What is your overall impression of the study?

This longitudinal study examines the association between segmental trunk control (by SATCo) and gross motor development (by AIMS). Study objectives are clearly stated and measurable. Methodologies are clear (except the statistical section). Data presentation for SATCo is of major concern (for some age, it seems like every infant has the same SATCo score). It is not clear how, and if, data dependency (i.e., time of assessment, and static/active/resistive SATCo should be treated as repeated factors) are addressed in their statistical analysis. The authors need to re-organize and present their data for readers to understand their results.

* What have the authors done well?
Succinct and relevant literature review.
Study objectives are clearly stated and measurable.
Selection of two developmental tests (e.g., SATCo & AIMS) with good psychometric properties.
Methodologies are clearly written (except the statistical section).

* In what ways does it not meet best practice?
Legends are not explained in Figure 1. Abbreviations are not explained in Figure 2 (i.e., LT, UL etc.).
The authors did not describe the overall statistical approach. It seems like data dependency is not considered in statistical analysis.
SATCo data are not believable.
REQUESTED REVISIONS:

The reviewer does not know how to "read" Figure 1. Legends are not explained. Please add legends.

Please discuss if Friedman test treat time of test as a repeated factor.

The reviewer can't understand the report on SATCo score. Isn't that some infants may have developed control over a specified segment while other infants are still mastering control of that segment? In short, how can it be SATCo scores are a specified number for each age (shouldn't it be x% infants developed control for segment A, y% infants developed control for segment B etc.?) It seems like every infant has the same SATCo score at given chronological age.

There are too many duplications in Table 1. Suggest re-organize Table 1 so that AIMS scores are not reported multiple times.

r (p) are not reported between SATCo-static and AIMS-supine.

Suggest reporting AIMS score at 7, 8, 9, 10, 11 month before presenting association between AIMS and SATCo.

It is not necessary to describe AIMS in so much details in the result section. Simply marks % of infants achieving each motor milestone on Figure 2, bar graphs.

SATCo data don't seem to be possible. For example:

The level of learning static control at this 7-month age was at the lower lumbar segment (Figure 2).

At 8 months, the levels for learning both static and active control were lower lumbar to full trunk but upper to lower lumbar for reactive control (Table 1 and Figure 2).

At 9 months, the levels for learning static and active control were at full trunk and some infants (n=8, 40%) had gained full trunk control.

At 10 months of age, the infants continued to consolidate their gained or nearly gained full trunk control what nearly means?

By 11 months of age, most of the infants had gained full static and active trunk control (11 months: n=17/19, 89%; 12 months: n=17/19) and about three-quarters had gained full reactive trunk control (11 months: n=14/19, 74%; 12 months: n=16/19, 84%).

Is it real that every infant has the same level of trunk development at specified time for 8 month old? The statement about SATCo at 9 & 11 months are more believable than other SATCo data that reports same score for every infant at specified time. It is very strange that Table 1 only present single SATCo for 9, 11 months (which does not reflect the percentage described in the text).
ADDITIONAL REQUESTS/SUGGESTIONS:

No

Note: This reviewer report can be downloaded - see attached pdf file.

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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