Author’s response to reviews

Title: A heel-strike real-time auditory feedback device to promote motor learning in children who have cerebral palsy: a pilot study to test device accuracy and feasibility to use a music and dance based learning paradigm

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Version: 1 Date: 29 Nov 2017

Author’s response to reviews:

Dear Editor Gillian Lancaster:

Subject: Submission of revised paper PAFS-D-17-00070

Thank you for your email with the reviewers’ comments. We have carefully reviewed the comments and have revised the manuscript accordingly. Our responses are given below in a point-by-point manner. Changes are tracked in the document ‘Manuscript_Track_1’ and the clean version of the revised document is submitted as, ‘Manuscript_Clean_1.docx’.

We hope the revised version is now suitable for publication and look forward to hearing from you.

Sincerely,

Jaswandi Pitale, Ph.D.

Response to Reviewer:

Thank you for your review of our paper. We have answered each of your points below. The line numbers mentioned in the response are with reference to the document, ‘Manuscript_Track_1’.
1. Please provide confidence intervals for your results so that readers may assess the variability of your results.

Response: The confidence interval has been added for the device accuracy (p. 2, lines 27; p. 9, 165).

2. There are many figures, and many of these are poor quality (eg, no units given, accuracy greater than 100% and so on.). I suggest the authors reduce the number of figures so that each is necessary and also improve their quality.

Response: The number of figures has been reduced to include only the relevant ones, accordingly changes have been made in the text reflecting the figures. No changes have been made to Figure 1. Figure 2, units have been added to sensor accuracy to reflect that the histogram represents the accuracy in units percentage. Figures 3 and 6 mentioned in the original document have been deleted since the plots were confusing and did not provide much information (p. 18, lines 305-309; p. 9, lines 167-169). There was redundancy in the information shown by figures 4, 5, 6 from the original manuscript, thus figure 6 was deleted.

3. The tense used is not consistent throughout the paper -- please correct.

Response: We are sorry for overlooking the tense. This has been corrected in the entire manuscript and the changes have been tracked with comments.

Response to Reviewer 2:

Thank you for your comments. Our answers to your points are as follows.

1. Battery power required for the device is not discussed.

Response: The prototype is powered using a 9V battery; this has been added in the prototype description (p. 4, lines 69-70).
2. Any other safety issues are also not discussed.

Response: No safety related issues were experienced while wearing the prototype device. We acknowledge that subject safety is an important factor for any pilot and feasibility study and have changed the manuscript to include ‘Safety’ as one of the secondary outcomes in the results for this study (p. 10, lines 193-198).

3. The device should be tested on more number of CP children.

Response: We agree that testing the prototype with more number of CP children will give us more insight into device development pertaining to a specific target audience and have acknowledged this as a limiting factor for this study (p. 13, lines 264-268). With the current number of participants, the accuracy showed no particular trend across subjects or pathologies and in future more number of participants with CP can be recruited to further test this hypothesis. Currently we can no longer actively recruit for this study under this IRB protocol and thus cannot test with additional subjects for this feasibility study. There are plans to conduct a RCT in the future to test the device efficacy and efficiency, more subjects with CP with varying GMFCS levels will be recruited for that. (p. 12, lines 244-255)