Author’s response to reviews

Title: Truncal Changes in Children with Mild Limb Length Inequality: A Surface Topography Study

Authors:

Theodoros Grivas (tgri69@otenet.gr)
Konstantinos Angouris (costasaggr@hotmail.com)
Michail Chandrinos (chandrinosmichail@gmail.com)
Vasileios Kechagias (vkehag@yahoo.gr)

Version: 1 Date: 25 Aug 2018

Author’s response to reviews:

Dear Editor in Chief

Many thanks for the useful comments and the suggestions for improvement of our submission.

The reviewers received the initial version of our submission and they commented on this text. However, we at the very beginning, had submitted a revised first submission. For some reason the reviewers did not receive this submitted revised very first submission.

Our response in blue bold letters, of course, will be answering the comments of the reviewers unless these comments are on the wrong version of our submission. We will try to make it clear to the reviewers, as well.

We respected the Editor’s suggestions, and the article was essentially re-written. Therefore, we submitted this vastly revised article.

Reviewer #1: I would like to thank the authors for submitting their wonderful work to the journal. It was my pleasure to have read their wonderful study. This study clarified pelvic imbalance, spinal posture and scoliotic curve during two years of follow up, using Surface Topography Analysis.
We wish to thanks the reviewer #1 for his kind words for our study.

We are sorry but the correct first submission did not present a two years of follow up. The correct first version of submission (with the response to the comments of reviewers) is what is submitted in this round.

I have some comments for major revision. My specific comments on their work is noted below:

1. Does the author clarify the correlation among the parameter of coronal, sagittal, and transverse view?

We thank the reviewer for the comment. We present the correlations among the parameter of coronal, sagittal, and transverse view in the revised version of our submission.

Reviewer #2: SCOL-D-18-00016

This is a study using surface topography to measure a set of parameters related to spine deformity for children with mild limb length inequality. The topic is clinical important, the study is straightforward, and the results should have clinical significance.

Following improvements and comments are suggested for authors.

We wish to thanks the reviewer #2 for his time spent and his useful comments and suggestions for improvement of our submission.

1. The abstract is in too much details, it should be more concise. For example, there is no need to describe the statistics software and its version used. Also, for results, only highlight those most important findings. In the currently version, the results section in the abstract is almost the same as the that in the Results section of the whole manuscript.

We thank the reviewer for the comments We edited the abstract as was suggested.

2. The introduction section should be enhanced to demonstrate more the significance of the study. The first three paragraphs of the Discussion section can be moved to the introduction section, as they are introduction of the importance of the system.
We thank the reviewer for the comments. The introduction section was enhanced demonstrating the significance of the study. Additionally, we moved the first three paragraphs of the Discussion section to the introduction.

3. The Discussion section should be used to discuss more on the results and findings of the study, and in comparison with similar findings in the literature, its clinical meanings, and the limitations of the study. The current version of discussion does not have enough depth. In the last paragraph of discussion, it was mentioned that "... we advice the correction of even mild limb length inequality below the classic definition of 2.0 cm with the use of several insoles, as the parameters measured were statistically significant and impacted to pelvic imbalance and spinal posture." This is a very important finding, however, there is no detailed descriptions in the Methods and Results sections, and no statistical significance has been described in the results. Since the results presented in the current version are just a set of values, and there clinical meanings have not been elaborated or discussed. If insole correction was conducted for all the subjects, and they were scanned before and after applying insole, then the authors can analyze what parameters (currently there are too many, but we do not know which parameters are more clinically relevant) are most useful clinically.

We thank the reviewer for these comments. We responded to all the above useful suggestions of the reviewer.

4. The current results are straightforward, but also too simple. We do not know which parameters are more clinically important related to the intended application. It is easy for the system to generate all these parameters, but they may not have equal clinical significances. This should be one of the aim of this study to tell readers of this paper.

We thank the reviewers for this comment. We present the parameters more affected due to LLI and we also present the statistical significance of each one of them.

5. Has the reliability of the reported parameters been tested, or reported previously in the literature, then they should be cited in this paper for reference. The only reliability mentioned is on Page 6 Line 45 (by the way, the manuscript should have a page number for each page) "The LLI reliability study showed intra-rater 0.08 cm and inter-rater error 0.1 cm respectively". We normally use ICC, instead of error to show reliability. This should be checked.

We thank the reviewers for this comment. However, we describe clearly in this revised submission the way we studied the reliability of LLI measurement. The way we did it is a well-
accepted method of intra and inter observer error, study. We used this method, and it was well received, in a number of our previous PubMed publications.

6. In the Methods section, it was mentioned that a tape of 0.1 cm increments was used to take some measurement. However, such results have not been reported. Similarly, OTR (we suppose the reviewers writing OTR means angle of trunk rotation – ATR) seems measured using scoliometer as shown in Image 1, but no report. It is suggested to correlate these manual measurements with some related parameters provided by the topographic scanning. Otherwise, the two sets of measurement seem completely separated.

We thank the reviewers for this comment. We did what was suggested. The ATR reading of the scoliometer in the lumbar level was correlated with the 4DF parameters and we present the results with the statistical significance.

7. Page 5 Line 53: "…to produce graphical, clinical and analytical information on the spine". I feel the topography image cannot provide all these in a very straightforward manner, as it is just an imaging device.

8. Suggest following changes:

- Change Image 1 and Image 2 to Figure 1 and Figure 2, it is a more common use

- Change 0,08 or 0,1 cm to 0.08 and 0.1 cm, and many similar descriptions, to make it consistent

- Avoid using a paragraph only with single sentence (page 7, line 31)

Done

- Page 7 line 44, "… with previous other studies …" reference should be given.

ok

- Figure 1 (Image 1) should have sub figure indication, like a), b) and c). I am not very sure it is deemed necessary to show the breast and nipple for this female subject, are the information shown in this figure related to the study results [as far as I know, this topographic system only measure the back]. If not, suggest deleting it.
The figure was deleted.

- Suggest adding a Figure showing the meaning of the main parameters, in relation to the imaging or spine model provided by the system.

We added two figures for this suggestion.

- The normal way to present value is to use min, max, mean and SD, suggest adding SD, and the Table 1 can be improved in a more common format.

done

- Also, in Table 1, we see different digits after decimal for the similar parameters, from none to 3 digits (with more digits, meaning higher precision of the measurement system, here not the case), thus suggesting using one digit after decimal, as 0.1 cm and 0.1 degree is reasonable precision.

corrected.

Finally, according to reviewers’ suggestions, the English language was improved.