Reviewer's report

Title: Reliability of upright posture measurements in primary school children

Version: 1 Date: 18 May 2004

Reviewer: Daniel Chow

Reviewer's report:

General

The reliability of posture measurements was evaluated using 38 primary school children. Five posture angles were defined and measured twice within the same hour. The data were analyzed using simple paired t-test to determine whether there are significant differences in the angles between the two trials. Moreover, the effects of age, gender and pain on the differences of angles were analyzed using one-way ANOVA. The effects of height and motor control on posture angles were studied using simple linear regression.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

There are several major concerns to the study.

1. The total sample size of the study was 38 and the effects of four factors (test-retest, age, gender, pain) were evaluated independently. The accumulated type I errors for drawing multiple conclusions as well as the interactive effects between factors are unclear. It is suggested to perform a repeated measures ANOVA with mixed design to evaluate the effects of all factors simultaneously.

2. Statistically, using paired t-test to demonstrate the reliability of the measurements is not adequate as the p-value will be strongly affected by the measurement error of the study. Intra-class correlation coefficient method should be used to study the reliability before drawing the conclusion.

3. The use of small sample size for studying several factors is not adequate. As the focus of the article is on the reliability of the posture measurements, the authors should decide either to focus on the reliability study or to use larger sample size to evaluate the effects of various factors.

4. More details related to the validity of the measures of pain and motor control should be included.

5. The error of repeated measurements of the same photos should also be evaluated.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. The literature review is relatively inadequate as the aim of the study was not fully justified.

2. It is not clear how the subjects were instructed to stand in particular the arm posture shown in figure 1.

3. There was an additional reference 4 shown in the reference list.
Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: Yes