

## **Reviewer's report**

**Title:** The paediatric flat foot proforma (p-FFP): improved and abridged following reliability analysis.

**Version:** 1 **Date:** 12 June 2009

**Reviewer:** Meredith Wilkinson

### **Reviewer's report:**

Thank you for inviting me to review this article on The Paediatric Flatfoot Proforma (p-FFP): improved and abridged following reliability analysis. This revised guideline will be well received and acknowledged by many health professionals exposed to the conundrum of the flat footed child.

#### Major essential revisions

This submission is not very clear and therefore it is difficult to understand how the paper arrives at its conclusions. Therefore, below I have identified areas for consideration (numbered). Further discussion and thoughts on these areas are provided throughout the review.

1. A clear explanation of the age group (ie 7-10 year olds).
2. The significance and relevance of the inclusion of the anthropometric data.
3. Is the sample size of 31 children aged between 7 and 10 years enough to draw such definitive conclusions about the abridged Proforma?
4. The need to include of a list of features/items and how they were assessed in the reliability component of this study and discarded as they were found to be unreliable.
5. The relevance of figure 2 in the results section and to the overall development of the FFP. Table 2 and 3 provide no explanation of the disparate results between the left and right foot (eversion and RCSP) and between raters (eg. heel inversion with tip toe).
6. Discussion needs to be expanded.

#### ABSTRACT

Under the results section change the wording of 'unacceptably reliable' to poorly reliable or similar, a description that an item/feature is unacceptably consistent is not proper English.

#### BACKGROUND

Include in the background the purpose of including anthropometric measures, although interesting information, it is not clear to the reader why or how these measures are going to contribute to the main aim of the paper which is testing the reliability of items and therefore abridging/refining the FFP. Contrary to what

the authors have stated at the end of the background section, the article in its current format, has not assessed the value of the abridged version of the FFP.

The aim of the paper needs to be re written, the aim is about identifying reliable items to refine the instrument and needs to include the purpose of anthropometric measures.

## RELIABILITY STUDY

There needs to be a clear explanation of why the 7 to 10 year old age group were selected. This age group maybe considered by many to be passed the developmental age group and is a differing age group to a number of studies in the reference list.

## METHOD

The protocol for the method overall is sound. However, throughout the paper it is not clear all the features/items that were assessed and therefore included or discarded in the final FFP. From the initial clinical pathway (Figure 1) physical assessment of ankle joint and forefoot to rear foot relationships, muscle tone etc would have been part of the reliability study, however, the method does not mention a non weight bearing assessment. Further to this point and importantly, Table 4 highlights that most of the features discarded were from observations/assessments, however, to the reader it is difficult to work out what those items were and how they were assessed in this current study.

To improve understanding, in my opinion all features/joints/muscles tested in the reliability component (n=31) should be listed and a brief explanation of how they were tested.

## DATA ANALYSIS and RESULTS

Suggestions:

1. Delete most of Table 1. Most of the information is superfluous and not discussed in the body of the paper.
2. The relevance of Figure 2 is questionable, although this histogram illustrates the frequency of waist measurements it does not illustrate or explain the reported correlations (as reported in the results section, paragraph 2, page 8).

## DISCUSSION

Broadly I think the discussion should be expanded to include debate on other areas. This would enhance its interest and usefulness to clinicians.

Although the findings that there is a strong correlation between girth measures, weight and height is of interest, (as previously mentioned) the usefulness of this information in relation to the Proforma is not discussed.

Of concern is that this current study found that there was an inverse correlation

between body weight and flat feet, which are contrary to the results of Pfeiffer (page 10 2nd sentence) and the meaning of this result is not analysed. We are left with the apparent knowledge that flat feet are related to a heavier body weight in preschool children and more related to leaner children between the ages of 7 and 10. Some debate on these different findings would be helpful. Is it just a difference between age groups? Which study is the more reliable study? Is the sample of 31 children enough?

Further on the feature of obesity, is it beneficial for clinicians to measure the girth of the child (as this is a reliable measure of obesity)? And therefore, clinically is this measure important to the Proforma as an indicator of ensuing poor health or an indicator that any flat foot posture is not related to body weight and size in 7 to 10 year olds. In Table 2 and 3 obesity is listed under the observed items, however, wasn't it measured?

Discussion, paragraph 2, (page 10). This paragraph tells us why many items are discarded (neither results Tables display the ICC results, for the poorly reliable features) however, given that the Proforma has been developed as a clinical guideline, surely there is value in including some debate as to why such significant clinical assessments such as ankle joint range of movement were found not to be reliable. From a clinician's perspective, ankle joint range of movement is an important assessment as it is pertinent to the stability of the child and frequently contributes to the foot posture. The deletion of items such as Ankle joint range, without explanation may be disconcerting to clinicians. Also other items such as ligamentous laxity and muscle tone (without underlying diagnoses) are included in the revised Proforma however, the inclusion of their assessment in this reliability study is not indicated in Table 2 nor 3.

Would it be useful to reassess the reliability of certain items and again revise the Proforma?

As previously indicated above in this review, the sample size was 31 children of a specific age and although the results are really interesting and have potential, they are not definitive as promoted in the discussion. The paediatric population spans a much larger age group.

As indicated in Table 2 could the authors comment on the different scores between left and right on clinical signs such as heel eversion and RCSP. In Table 3 discussion on the variability of scores on items such as heel inversion on tiptoe, navicular height and knee position.

Finally is my interpretation correct, that of the sample of 31 children (flat footed children aged between 7 and 10) without symptoms or underlying diagnosis, would result in the 'amber' light plan of action which is to monitor?

Discretionary revisions

Discussion (page 9) third sentence, commence with 'This is contrary to previous....

Discussion (page 10) line 7 delete the word 'I'

Reference 41. Typing error in the word 'based'.

**Level of interest:** An article of importance in its field

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

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests