Reviewer's report

Title: The paediatric flat foot and basic anthropometry in 140 Australian school children. Fatter children not found to have flatter feet.

Version: 1  Date: 14 July 2010

Reviewer: linda lang

Reviewer's report:

In my view the paper will need minor essential revision
I think the statistical analysis might be improved with some advice from a statistician.

1. The research question needs to be expressed more clearly
E.g. This study was designed to investigate whether there was a relationship between flat foot and body weight in Australian children aged seven to nine years.

2. The method
The method used especially the FPI score does need to be briefly outlined for the reader in the method section. I suggest that the range and normative values for foot posture in children aged 7-10 are cited in the results or discussion to aid the reader in interpreting the FPI-6 scores reported.

Demographic date should be included in the method: age range, sex and ethnicity of subjects in the study sample and control group. Ethnicity is particularly relevant as it is referred to as a factor in the discussion. Method used to select subjects i.e. random sample, all children in the age range attending the class on the day of data collection etc any additional inclusion /exclusion criteria used to select the student as they entered the study and before they were measured.

If possible could the details of the height gauge be expanded to include if it was wall mounted, were the scales calibrated at the start of each day or each measuring session in the school? Is girth an accepted proxy for obesity on its own, I was not aware of this being so, could you cite its use in other studies? Was the intra-measurer reproducibility evaluated, if not this needs to be acknowledged as a limitation of the study in the discussion?

3. There is a late mention of an outlier, it is normal to decide on the inclusion or exclusion of outliers before using data and before conducting any statistical analyses. If the outlier was included as it appears, then this should be mentioned and explained earlier in the results section. One of the limitations in the study, which unless it can be corrected, should be acknowledged seems to be that there was no evaluation to indicate how many children, if any were over weight or obese.
4. The manuscript does require some further work before it is put to press.
5. I suggest that the manuscript has merit there is a need for more information to clarify the method and results.
6. The title could be more informative e.g. Flat foot posture and its relationship to weight and general body dimensions in Australian children aged 7-10.
7. I would suggest the following amendments:

Page 2 Abstract last line:
Further investigation is indicated using a standardised approach such at FPI-6 and a larger sample of children to further test this apparent contradiction.

Page 3
Line 7 from top:
Typical lower limb complications cited as possible associated with obesity include.....
Line 12:
…as identified by a review...

Line 13: The definition of flat foot is not standardised, nevertheless there is general consensus that the height of the medial longitudinal arch is the principle parameter ......

Line 6 from bottom of page:
The presence of flat footed posture has long been described as a foot abnormality often associated with pain and poor function. For this reason, many patents are naturally anxious to obtain prophylactic advice and treatment if they suspect that their child suffers from this condition

Page 4 last sentence I suggest should read:
This study investigated the relationship between flat foot posture, as rated by the FPI-6 method and body weight and related anthropometric measurements, in a sample of Australian school children aged seven to ten years.

Page 5 Methods
Ethical approval information should be moved and placed in the method section.

See point 2 re further demographic information.

Second paragraph from bottom should read:
The following general body anthropometric measurements for each child were made and recorded by a second measurer: height, weight and waist girth. Height was measured using a calibrated height gauge, weight using digital read-out scales and waist girth was measure using a standard tape measure.
Page 6
Line 7 ……scatter plots were used to explore and illustrate relationships between parameters.

Results
First paragraph last line: The term significant should generally be avoided unless this has been statistically tested. If this was done then please this add information to the results.

Page 7
Second Para
In the course of date collection and subsequent analysis it was apparent that one subject’s anthropometric values were higher those of any other subject in the study.

Discussion
First line should read:
The anthropometric findings in this study ……

Page 9
First Para I know the convention is to write number lower numbers however, I suggest that this line would read better if the ages were written as follows:
…..children aged seven to ten years, (this suggestion also applies to line 5)
Lines 3-4:
…..this study does focus on a narrower age range of just four years.

Second Para, line 4:
…..however; it is possible that the greater surface area …..

NB In addition all the tables need to be properly labelled.

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