Reviewer's report

Title: Consensus-based recommendations for the prescription of foot orthoses for symptomatic flexible pes planus in adults: development of the FootPROP proforma

Version: 1
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Reviewer: Trevor D Prior

Reviewer's report:

This is a very good paper, is well structured and laid out and provides a consensus document for future research. It is suitable for publication subject to the comments below.

Compulsory revisions

1. Given that this is a paper that provides information for future research, it is critical that the definitions and terminology are clear. In my opinion, there remains some potential confusion regarding the modified Root device (neutral) / cast pour / rearfoot control.

In the definition section, the authors’ state that a neutral cast pour, occurs when the cast is balanced around the neutral calcaneal stance position. However, the traditional approach would be to pour the cast to calcaneal vertical such that any motion of the positive cast is reflective of the forefoot to rearfoot position. There are instances through the paper which would support this concept and these include:

- In supplementary document two, the definition indicates that the forefoot is balanced to perpendicular. It is not possible to do this on the cast if it is balanced to a neutral calcaneal stance position which has any degree of inversion.
- In table 1 the definition of a rearfoot post, external (neutral) is one that stabilises the orthoses in a vertical position. This would not be accurate as the neutral position in the majority of instances is inverted. This would be more accurately described as a stabilising rearfoot post or a heel vertical rearfoot post. One of the responses in supplementary document four, point 6 where the respondent indicates that this would be used when a varus or valgus post has not been tolerated would be consistent with a 0° post.

This requires clarification.

Discretionary revisions

2. The last two sentences of the discussion recognise that the prescription habits identified in this study may differ in other countries. I think it is important that the title reflects that these are the prescription recommendations from:

a. Podiatrists (it may be different for other professions) and
b. Australia

3. One aspect the authors have not mentioned is the nature of the casting technique. This is alluded to in supplementary document two, paragraph 2. However, one casting variable is to cast the foot in a corrected position such that any forefoot supinatus is reduced at this point. This is referred to by one of the respondents under point 2 of supplementary document four. Was this option purposely excluded by the authors?

4. The definition of the modified Root device included in supplementary document two should either be referred to in the main text or quoted in the main text.

5. Can the authors clarify the 1st metatarsal/1st ray cut out? This is likely to be down to terminology. In the UK, a common adaptation is to remove a small section of the medial aspect of the distal shell such that it is slightly curved at this point. This is generally referred to as a 1st MTPJ cutout. Is this what is defined as a 1st metatarsal cutout or would this cutout extend to the base of the 1st metatarsal? This would obviously affect the definition of the 1st ray cutout.

6. In the last paragraph of the conclusions, the authors refer to ‘a balanced forefoot post’. I assume this is an intrinsic forefoot post and feel it would be helpful to use this term. An extrinsic forefoot post can be considered to balance the orthotic and this is a potential for confusion.

7. The authors note that consensus was achieved for the use of polypropylene which has been included in their pro forma and this is a recommendation in the conclusion. Accepting that this was the conclusion from the study there are potentially two options for the conclusion:

   a. For research purposes and to ensure that there is no effect caused by differing materials, polypropylene is the recommended choice.

   b. For clinical purposes, it would be reasonable to utilize a range of materials that achieved the desired outcome in terms of rigidity.

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests