Reviewer's report

Title: Foot pain and functional limitation in healthy adults with hallux valgus: a case control study

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Reviewer: Edward Roddy

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The manuscript describes a small cross-sectional study of the associations of hallux valgus in healthy adults. The study explores foot pain, physical disability, general health, satisfaction with appearance, difficulty with footwear, and functional performance. Whilst pain, disability, general health, and functional performance have been considered previously in larger studies, the novel aspects of this study are firstly that it was undertaken in healthy adults as opposed to older populations and secondly the data pertaining to appearance and footwear.

Major compulsory revisions

1) The manuscript title and introduction section refer to a case-control study. The abstract refers to a cross-sectional study. Although the study compares healthy adults with hallux valgus to "controls" without hallux valgus, it is not a case-control study as it examines cross-sectional associations rather than defining cases and controls by outcome and then looking back retrospectively for exposure. The manuscript title and introduction should be amended to describe a cross-sectional study.

2) Methods (pg 5), Subjects: Control subjects without hallux valgus were matched for age, gender and BMI. What ranges for age and BMI were used to match eg for age +/-2 years, +/-5 years?

3) Methods (pg 6), Measurement procedure: Intra-rater reliability obtained for this study are presented in table 1. The method for obtaining these data is not described. Were they obtained in this population of 60 people or were they derived from the published literature? If intra-rater reliability was assessed in this population then the method for doing so should be described and table 1 would be better signposted from the results section rather than the methods. What was the interval between the two assessments?

4) Methods (pg 7), General health and physical activity: Does the physical activity questionnaire have a name? Over what time-frame is physical activity assessed eg current, last week, last month etc?

5) Methods (pg 7), Self-reported foot pain and disability: Foot pain and disability scores were produced by summating responses to the Manchester Foot Pain and Disability Index. Use of such summated totals is problematical as it assumes that the scores are uni-dimensional and of an interval-level. Consideration should be given to use of Rasch-transformed scores or, at the very least, this issue
acknowledged in the discussion.

6) It is interesting that the sample size calculation is based on pain as the authors state in the introduction that concerns about appearance and difficulty with footwear in this population are the most novel aspects of the study. Nevertheless, it would be helpful if details were provided of the pilot data on which the sample size calculation was based.

7) Data are presented for the total FPDI and for the pain and function sub-scales. Although it would not be appropriate to present summated scores for the two items on the appearance sub-scale, as it is the findings related to appearance that are the most novel have the authors considered comparing responses to these to these two items between the groups (eg proportions answering none of the time, some days, most/every days)?

Minor essential revisions

1) The abstract conclusion contains a potentially confusing double negative: ”...negatively impacts on self-reported...disability”. Negative impact on function might be better.

Discretionary revisions

None

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

**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