Reviewer’s report

Title: The effect of variation in interpretation of the La Trobe radiographic foot atlas on the prevalence of foot osteoarthritis in older women: the Chingford general population cohort

Version: 0 Date: 01 Aug 2017

Reviewer: Shannon Munteanu

Reviewer's report:

General comment:

The study tests if there are differences in radiographic OA prevalence for different scoring approaches of the LFA. The study concludes that there needs to be harmonisation of case definitions of foot OA. The case definition (ie: a score of 2 for OP or JSN in any view) has not been varied. Therefore, can the authors please consider revision of this statement - there should be harmonisation of scoring approaches… Please review the Abstract, Introduction and Discussion/conclusion regarding this wording.

My comments are below

Abstract:

As LFA is stated in the Background, it can be used within the Methods rather than 'La Trobe Foot Atlas'. There appears to be inconsistency in use of hyphen versus en dash / em dash.

Background:

P4L77: Please consider adding of hand OA figures given the sentence is a generic one as to the disability caused by OA?

P4L83: Please include some description of the ages associated with the prevalence of symptomatic foot OA. Could this sentence be moved to the concluding sentence of para 1?

P4L86: Do references 12, 13 and 14 support your argument regarding discordance in how foot OA is defined?

P4L93: Please check for missing full stop.

P4L101: Please review rogue space ‘( 1st MTPJ)’. 
P5L108: Can you please provide some references and explanation to support your notion that '…as with other radiographic atlases, the ordinal technique for scoring introduces an interpretative approach….under or over estimation in the prevalence of OA'.

P5L108: It may be worth including that the LFA uses an ordinal scoring system for JSN and OPs in the preceding paragraph where the LFA is first introduced.

Methods:

P5L124: please add ' years' to after '45-64'.

Foot radiographs:

Can you please provide some data regarding the mean (SD) age, height, weight, BMI of your sample (218 women for which you had radiographs). This is important as the prevalence of foot OA does vary according to age (and BMI).

Radiographic scoring:

Please be more explicit who did the scoring of the radiographs.

P6L153: Please consider changing the word 'case definition' to 'scale description' (rather than case definition which relates to the presence of absence of OA at the joint).

P7L165: Please consider a subheading. Can you please provide some justification for the development of Technique 2. Has this approach been used previously? Technique 3 appears to be the same as Technique 1. Since, in the original development of the LFA atlas, the assessors gave a score that was 'conservative' where they were unsure (ie: a score sat in the middle of two scoring options).

P7L177: Please consider some type of 'reproducibility of radiographic scoring of foot osteoarthritis' subheading. Can you provide some inter-rater reproducibility data between PMc and the OA scorer who had previously used the LFA? Please clarify who was this person. The reproducibility of the rater (PMc) appears moderate and notably less than for the raters in Menz et al. (2007). Is it possible that this may confound your estimates of the prevalence of OA at individual joints and differences in prevalence for different techniques?
Results:

Can you please elaborate (in Discussion) how the prevalence of radiographic foot OA is greater for technique 3 than 1. I would have thought taking the more conservative option when scoring (some) items would lead to a reduction in prevalence of foot OA since you are 'scoring down'. There appears to be inconsistency in use of hyphen versus en dash / em dash.

Discussion:

P9L226: ‘…discordance in case definition…’ - can you please review this as to the reviewer's knowledge, there hasn't been any discordance in case definition of OA using the LFA.

P9L232: Consider spelling out OARSI.

P10L241: please insert a '.' after 'et al'. Please review entire Discussion.

P10L254: This paragraph could be omitted. You cant really compare your study to reference 10 since reference 10 had a definition of symptomatic OA (symptoms plus radiographs) whereas you have radiographs only so can only compare to studies that have published radiographic OA prevalence data.

P11L265: A statement is made that the atlas is subjective because it is not interval/ratio scaled. Can you please review this sentence because 'subjective' is ambiguous. In addition, even if the atlas used a 100 point scale or more (and was interval/ratio which is not practical or necessary), it would still be 'subjective' in that it relies on human judgement for scoring.

P11L271: Please consider omitting'…In addition, the normal joint space width reference used by the LFA is not based on a population study'.

P11L275: The sentence regarding the reliability of the assessments doesn't not fit here where sensitivity across views is discussed.

Limitations:

Please consider that you weren't able to obtain corresponding foot pain data on these participants to determine symptomatic foot OA prevalence.

What are the implications of your moderate reproducibility in using the LFA on your results of radiographic prevalence across techniques?

P12L294: the sentence regarding the reliability of the LFA versus the current study could be omitted. It really isn't the aim of the study.
P12L301: Add in 'years' after '69-93'.

P12L306: Please consider rewriting this to remove mention of OA of the knee, hip or hands.

References:
Please review abbreviation of journal titles for references 6,8.

Please review the journal style for the bibliography (check if there is a need to write 'p' for page number).

Tables:
Please check journal guidelines regarding presentation (e.g. no vertical lines).

Table 1:
Is there a need to report p-values for the Kappa values? Percentage agreement could be reduced to zero decimal points? Kappa values could be reduced to 1 decimal point?

Are the values showing dorso-plantar or lateral view assessments?

Table 2:
Please specify 'RG' or spell out.

A symbol associated with 'Number of ungradable joints' doesn't match the footer.

Please use superscript where appropriate within the footer.

Technique 1 - 2 values should be positive?

Table 3:
A symbol associated with 'Number of ungradable joints' doesn't match the footer.

Please use superscript where appropriate within the footer.

Technique 1 - 3 values should be negative?
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Please indicate the quality of language in the manuscript:

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