Reviewer’s report

Title: Knee Pain and Related Health in the Community Study (KPIC): a cohort study protocol

Version: 1 Date: 15 Jun 2017

Reviewer: Niamh Moloney

Reviewer's report:

Thank you for asking me to review this protocol for: Knee Pain and Related Health in the Community.

This is a comprehensive project and the authors are to be commended for the in-depth assessment that covers multiple dimensions of the pain experience as well as the planned long-term follow-ups. On the whole the project is well justified and described methods and analysis align well with project aims.

There are a few items that I think need some consideration.

Page 9 Lines 29-34

Can the authors describe in more detail what is meant by constitutional knee alignment (in early 20's) and how this is different to current knee alignment?

Can they also explain whether both are measured using the self-reported tool referenced and make it clearer that this a self-report measure?

Page 10; Line 22-39

Why is a cut off of >/< 3 years used for early versus established knee pain? This appears incongruous with our standard definitions for acute, sub-acute and chronic pain. I can see that acute, sub-acute and chronic time frames may not be suitable for this study, however, calling <3 years early knee pain seems difficult to rationalize. Can the authors explain the rationale and supporting research evidence for using this time frame?

Page 11: Please specify what will the urine and blood samples will be analysed

Page 12, line 34: Please explain why balance will be assessed

Page 14: Why have only bony surfaces been selected for PPT testing? While I appreciate that joint line tenderness is characteristic in knee pain, and therefore makes sense in the context of the
study, PPTs over bony margins are difficult to perform well eg controlling the algometer and hence the location and application rate. Most studies include soft tissue locations- either solely or in combination of joint lines. Further, sites such as tibialis anterior, or hand (or forearm) could be used as there are considerable reference data available for these sites. This would enhance confidence about whether subsequent results were within/outside normative values.

Page 16. A number of questionnaires will be added at the 1-year assessment on the basis that they will contribute to the psychosocial aspects of the individual's profile and may hold predictive value. I don't argue with this point but why are these not included at baseline and re-assessed at year 1? In my view this would make more sense, particularly if considering the predictive value of these measures, and understanding possible pain phenotypes associated with knee pain, incidence and deterioration. As this is the primary aim of the study, assessing these measures at baseline would seem important.

Sample size calculations; Thank you for presenting detailed sample size calculations for your measures. The only one that wasn't clear, or appears to be underpowered was PPT. Can the authors clarify that what they have included is correct (i.e. 400:100:100)?

Discussion: Page 23 line 52. The authors explain that the method of knee pain classification is a standard method; however, here they refer to the method of recall for incident knee pain only, and not knee pain over the previous 3 years. How does this method relate to assessment of early versus established knee pain as outlined earlier in this manuscript? Further, it would be good to specify that this method of assessment relates to incident knee pain only.

Minor typographical errors:
Page 10, line 10 add 'be' after will in the sentence 'will then…identified'
Page 11, line 3 add 'be' after 'will then…obtained'

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes
Are the conclusions drawn adequately supported by the data shown?
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