Reviewer’s report

Title: Self-reported knee joint instability is related to passive mechanical stiffness in medial knee osteoarthritis

Version: 1 Date: 23 August 2013

Reviewer: Jesper Knoop

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This study on the association between patient-reported knee instability, laxity and stiffness is highly relevant and important. I only have the following minor comments for further improvement.

Minor Essential Revisions

Abstract:
- you could add ‘inverse’ to the significant relationship at line 12. Otherwise, it could be confusing.

Introduction:
- p3, line 20 and further on: please explain what you exactly mean by symptomatic knee instability
- p3, line 23: please remove medial as not all studies did only apply to medial OA.
- p.4 line 1-13: this part raised the following question: why did you aim to study the laxity-instability association, as several studies already did that. Is this because you think those earlier studies did something wrong? or because you want to replicate this negative finding? If so, please mention this hypothesis. If not, than the part were you explain that laxity may not be a good test (as it does not necessarily indicate stiffness) should be rephrased. Otherwise, why do you still hypothesize a relationship between laxity and instability if your theory is that laxity is not a good measure?
- p4, line 4: dependent instead of dependant

Methods:
- p.5 line 1: why only medial TF OA?
- p.5 line 9: why is a lower limb strengthening program an exclusino criterion
- p.6, line 8: please add all categories as not everyone is familiar with this questionnaire.
- p.7 line 21: how did you check for the assumptions. According to Table 1, the data does not seem normally distributed (because of the large group with score 5)
Results.
- p.8, line 13: please add the total number of persons with knee instability (also those not affecting daily functioning).
- p.8 line 22: you state that the only laxity index that was related was a stiffness-measure. This seems incorrect.
- p.8, line 23: did it also mean that persons without instability had more stiffness than those with instability but without problems in daily life?

Discussion:
- p.9, line 18: the van der Esch study seems to be more relevant is this study included multiple measures for activity limitations with the largest study sample.
- p.10, first paragraph: your study is in line with the others as no laxity-instability relationship was found. Why do you think this is? Please add 1-2 sentences to this paragraph.
- p.11, line 3-5: this suggests that laxity is just the inverse of stiffness. Therefore, it would be relevant to add the stiffness-laxity relationship in your study. Furthermore, this paragraph may be improved by better explaining the difference between stiffness and laxity as line 3-5 confused me.
- p.11, second paragraph: here you mention muscle strength. In my opinion, the lack of a muscle strength measure (as a confounder) should be mentioned as a limitation of the study.

Level of interest: An article of outstanding merit and interest 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.