Reviewer's report

Title: Do knee abduction kinematics and kinetics predict future anterior cruciate ligament injury risk? A systematic review and meta-analysis of prospective studies

Version: 0 Date: 09 Mar 2020

Reviewer's report:

The authors performed a systematic review and meta-analysis to determine whether knee abduction kinematics and kinetics were associated with risks of ACL injury. However, there are several major flaws in data synthesis that discourage me from accepting it from publication. Also, the manuscript needs a better rationale and story in the introduction with firm connections. For table 1, more comprehensive and detailed results (e.g. demographic information and main findings) are needed for a better understanding of the previous findings.

I am mostly concerned with the following things:

1. This study included heterogeneous measures (2D and 3D motion analysis, visual observation), I did not see why these various measures were chosen and why the 2D motion analysis and visual observation have the same quality as 3D motion analysis. I don't think that the frontal kinematics from the 2D and visual observation are appropriate.

2. In the discussion, the author mentioned "Our conclusions are based on a large sample (1979 participants across 8 studies)". However, the study included extremely unbalanced samples between ACL and control groups. For example, the result of peak knee abduction moments was based on 54 ACLs vs. 1330 controls. Thus, this study did not show any better picture and still limits its generalizability. In addition, most studies (Smeets et al. 2019; Dingenen et.al 2015; Räisänen et al. 2018; Nilstad et al. 2014) only included 4 female subjects for ACL (vs. up to 125 controls).

3. Due to a higher risk of ACL injury in women, this study should've focused on females, but it seems that some individual studies that did not consider the gender effect were included. Also, "the higher risk in females" was mentioned in the introduction, but this manuscript did not consider the gender differences.
4. In the figure 2, the medial knee displacements were from double-leg and single leg jump but I can't believe that the results during single and double leg vertical jump are comparable.

5. Overall, the data pooled from 2 and 3 studies were included in the meta-analysis for most variables, but the number of individual studies was also limited. As with ACL sample size, the pooled results were not generalizable.

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

No

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

No

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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