Author’s response to reviews

Title: Horizontal jumping biomechanics among elite female handball players with and without anterior cruciate ligament reconstruction. An ISU based study

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Version: 3 Date: 12 Sep 2019

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Responses to Technical Comments:

Editor Comments:

Thank you for your email.

I am sending your manuscript for major revisions, so that you revise your manuscript accordingly in response to the publication of your group's work in "Physical Therapy in Sport" (https://www.ncbi.nlm.nih.gov/pubmed/31254917).

First of all, we would like to thank to the Editor for given us the opportunity to give response to your requirements.

We humbly would like to clear up that this study is not a salami splicing case. In this sense, we are trying to clarify this concern to reviewers in the following lines.

The present study, apparently could be similar to our latest publication in “Physical therapy in sport” as is in relation to the same type of injury and sport. However many research has been made, trying to dilucidate whether male of female athletes may react or may adapt to the same way to a severe and diasbling serious knee injury such as the ACL ligament rupture. In that way, it is nowadays clearly stablished (Setuain et al 2105, Olsen et al 2004, Mycklebust et al 2003...) than femlae atheltes are exposed to a greater ACL injury risk (3 to 7 times more likely) compared to men at the same level of compettition and exposure. This research group has
published several investigations (Setuain et al. 2015, Sports Biomech, Setuain et al. 2015, Phys Med and Rehab; Setuain et al. 2019, Physical therapy in Sport, and a book chapter on the Handball Sports Medicine Book, ESSKA & Springer publication 2018) in all of which they have attempted to separately analyze the effect on jumping biomechanics in relation to ACL injury. We did not receive any feedback from the editor of any of the journals in which the papers were published. In our opinion, because in the core of the introduction or discussion sections, we argued why we considered that those kind of descriptive studies in such exclusive cohorts (professional male or female handball) should be described, discussed and concluded in their selves as they are two different genders, with differing magnitudes of acting forces, the jumping performance and injury epidemiology.

In the revision, please address the following that will be assessed by the Chief Editor:

1. Attach a PDF of the Physical Therapy in Sport article. I currently do not have access to it.

The file will be attached as suggested.

2. You write that "In the current case, the raw data belonged to different projects, due to the MALE handballs players had much more Athletic level and matches a month than the Female handball group"...explain and discuss what you mean by this to demonstrate clear differences between these two studies.

Attending to the results obtained from previous research, it seems that female handball professional players may cope with some lasting biomechanical adaptations after ACL reconstruction. The observed differences reported by this research group were centered on greater vertical, mediolateral and horizontal supporting accelerations as well as differing jump phase’s durations registered through the utilization of inertial sensors placed at the estimated centre of mass of the players during the execution of vertical bilateral and unilateral jumps (Setuain et al. 2015, Sports Biomec).

Thus, this could indicate a sex dependent prevalence of functional consequences to ACL reconstruction, keeping in mind that fully functional restoration is more prevalent among male athletes on team sports such as Basketball, soccer and handball. (Setuain et al. 2015, Phy Med Rehab; Busfield et al. 2009, Arthroscopy; Brophy et al. 2012, Am J Sports Med.).

May be, the existing substantial differences in relation to team budget, athletic training and medical staff resources, encountered generally between male and female professional clubs could also explain, at least in part, the observed worse prognosis for successfully return to sport among female athletes after ACL reconstruction.
The differing observed jumping mechanics together with lower training and medical staff resources, among elite female or male professional handball players, make it necessary, in the authors opinion to design adequately and sex specific investigations in order to isolate the co-existing variables in their own biological, biomechanical and socioeconomic environment.

3. Refer and discuss your findings of your recently published article in relation to the data being considered in SSMR.

Following editor’s suggestion we referred and discussed the mentioned results and also we summarized the encountered differences between male and female. The following paragraph was included in the discussion section of the manuscript as follows;

“This results, contrast with those obtained by the same research group employing the same jumping test battery and biomechanical analysis methodology among male elite handball players. In that study, the authors did not find any meaningful biomechanical adaptations among previously ACL reconstructed in comparison to control (non ACL injured) players. In this sense, it seems that male handball professional players are able to recover their lower limb full performance capacities without lasting biomechanical alterations that can be in contrast observed among their female counterparts. Although evidence exists referring no sex influence in relation to increased risk for ACL graft failure among sportspeople, [42] may be, this statistical trend would change when controlling for sex, handball sport, and level of competence of the participants. This question should be addressed in properly designed investigations.”


Authors revised and rewrote conflicting sentences that could have been interpreted as overlap by the editor. The changes made can be revised in the draft with changes document of the present submission.

Reviewer reports:

Antonino Bianco, PhD (Reviewer 3): Non more comments from my side.

Thanks for your positive comment.