Reviewer’s report

Title: Metabolic Rate, Forces and Performance on a Kayak Ergometer

Version: 0 Date: 02 Oct 2018

Reviewer: Wade H. Sinclair

Reviewer's report:

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This manuscript offers an interesting preliminary exploration of the role of forces applied at the footrest of novice, elite and international female kayak paddlers whilst completing their routine monitoring physiological assessments. The manuscript is presented well with a few grammatical errors that would benefit from review for fluency. The authors provide an insight in to the need for such forces to be identified and measured during athlete monitoring and the potential implications for the monitoring process including the refinement of technical efficiency during the kayak paddling stroke. I believe major revisions are required however and as such, have a few suggestions below for review:

TITLE

Albeit the current title is informative, I believe that an improved title would highlight the novelty of the manuscript, in particular the monitoring of forces applied at the footrest during kayak ergometry. A suggestion only, but "A preliminary investigation of footrest forces during kayak ergometry" highlights the preliminary nature of the study which is important in justifying the small sample size.

ABSTRACT
Informative and concise.

INTRODUCTION

Well written and concise.

Line 11, Page 4: "witch" should be "which"
Lines 19-20, Page 4: please clarify whether Aitken and Neal (1992) and Baker (1998) utilised males and/or females in the research.

I would suggest that the authors revise their preliminary aim to remove the reference to the metabolic response component. As the novelty of this study lies with the footrest forces, and given the small numbers, I feel that any reference to identifying a relationship between variables is misleading.

METHODS

Methods section is complete.

Lines 15-16, Page 5: Suggest to remove this sentence as no further reference to competitions are presented in the manuscript. Suggest merging with previous sentence: "...by the regional ethical review board at Lund, Sweden (ETIK 2007/72) and all subjects provided written and informed consent 11."

Line 2, Page 6: should read "...work level, there were two minutes rest sitting..."

Line 11, Page 6: remove reference to "see below" for the kayak ergometer as no Figure has been included in the manuscript. Dansprint are commonly used world-wide for kayak ergometry at the elite level however should you wish to include images of the modifications, please include images in your resubmission.

Lines 10-11, Page 7: Please rephrase this sentence.

Line 16, Page 7: Please provide details of variables derived from the "data signals".

RESULTS

Results are presented seemingly incomplete.

Line 9, Page 8: It would appear that the novice paddler did not achieve as succinct a plateau as the other paddlers, please provide a comment to reflect this.

Line 13, Page 8: reference to 500 and 1000m times yet no data is presented on these variables. As above with reference to the competition times, suggest to include a table of the additional data collected for each of the paddlers - 500/1000m times, other variables from the data signals. Alternatively, please remove all references to paddle times throughout the manuscript although I think these would contribute to the manuscript.
DISCUSSION

Discussion is presented.

Line 23, Page 8: As per above, please provide gender specifics for the paddlers used by Aitken and Neal (1992). Also, please provide scientific units for values presented.

Line 3, Page 9 and Line 22, Page 10: "relation" should read "relationship"

Line 6, Page 9: Please merge these two sentences for fluency.

Line 22, Page 9: This sentence is unclear, please rephrase.

Line 23, Page 9: Please rephrase "…the timing of balance the moment is important."

Lines 4-6, Page 10: This paragraph highlights the insignificance of the metabolic data collected with respect to your manuscript. Suggest using this information to highlight the differing abilities of the paddlers or include with the above suggested

Line 15, Page 10: Should read "…be the same if we analysed the forces after two…"

General comment: Your discussion should include reference to drag and inefficient transfer of power as discussed in the second paragraph of your introduction. The novelty of your study was to identify both footrest forces in paddlers of varying ability but this has also found that the international paddler it my cyclic than the novice and the elite moreso than the novice too - suggesting that the cyclic motion of kayak paddling may play a significant role in performance but also that you are able to identify this rhythm via your footrest method.

CONCLUSION

Lines 7-10, Page 11: These sentences discussing muscular strength and aerobic capacity are not reflective of the manuscript focus and as such should be removed. Please include further relevance of the importance of a coordinated kayak stroke on potential performance

TABLES AND FIGURES

All Tables and Figures are well presented

Figure 2 - Suggest including VO2 and BLa in to a table with competition times and other kayak ergometry derived data. This Table would then be a reference for differentiating between the
paddlers...could also include peak power variables. This would then leave Figure 2 as a standalone reference for power dynamics.

REFERENCES

#3 - Int J Sports Med (not Spotrs)

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.

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.

Not relevant to this manuscript

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

Needs some language corrections before being published
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