Reviewer’s report

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

Version: 0 Date: 30 Sep 2018

Reviewer: Erika Zemková

Reviewer's report:

The study determines the forces applied at the footrest during ergometric kayaking in individual kayakers at different competitive levels. The authors found that the relative differences between the three athletes were similar for power, VO2 and forces at the paddle. There were, however, dramatic differences in the forces applied at the footrest.

The results of this research are in my opinion of relevance to sports science and would fit the scope of the journal. There are, however, major concerns with respect to the argumentation in favor of this research. The limitation of the study is the relatively small sample size consisting of 3 elite female kayakers. For this reason, these findings cannot be generalized to the broader community based on this study alone.

Introduction

Was the aim of the study „to explore inter-relationship between metabolic response and the forces applied at the paddle and the foot-rest ...ˮ or „to determine the forces applied at the footrest during ergometric kayaking in individual kayakers at different competitive levels”?

Page 5, lines 4-7: The aim of this preliminary study was to explore inter-relationship between metabolic response and the forces applied at the paddle and the foot-rest during ergometric kayaking in individual female kayakers competing at different levels - junior elite, national elite and international elite.

Page 3, lines 3-5: The aim of this preliminary study was to determine the forces applied at the footrest during ergometric kayaking in individual kayakers at different competitive levels.

Methods

Specify inclusion and exclusion criteria for subjects to be allocated to the study.
Page 5, lines 12-13: All three subjects are members of a national team one junior kayaker, one national elite kayaker and one international elite kayaker.
Results

Please, include values of all variables used. Specify "similar relative differences between the three athletes" and „dramatic differences”.

Page 8, lines 13-16: The relative differences between the three athletes were similar for power, VO2peak and forces at the paddle. There were, however, dramatic differences in the forces applied at the footrest, where the most accomplished paddler generated forces 3 to 26 times as high as the least accomplished paddler.

Discussion / Conclusions:

The discussion reflects what authors found and how it relates to the literature. However, the authors should present the practical applications of obtained findings with respect to a specific group of kayakers at different competitive levels.

The authors should rewrite the conclusion; it should be based on findings of the study.

Page 11, lines 6-12: Important indices of elite kayaking seem to be high oxygen uptake, muscular strength and timing between arms and legs, and right and left side of the body. High oxygen uptake is needed to endure high frequency, high power kayaking. During training it seems important to increase maximal oxygen uptake as much as possible. Also to increase overall muscular strength seems important to be able to produce high forces. Not only is the muscular strength important, likewise seem the coordination between upper body and lower body to be important and the timing between pulling and push of the feet.

*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:

Acceptable

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