Reviewer’s report

Title: Will the age of peak ultra-marathon performance increase with increasing race duration?

Version: 2 Date: 5 September 2014

Reviewer: Jonathon Senefeld

Reviewer’s report:

The authors have appropriately addressed reviewers’ comments, and the manuscript has improved in reader clarity while retaining the original purpose of the manuscript. Below, there are several comments intended to improve the quality and impact of the manuscript.

The authors utilized a similar paradigm to previous study - analyzing the age of peak performance in ultra-marathon running across event duration- in a new conceptual framework by considering time-limited events. Although the authors demonstrated the age of peak performance of athlete’s did not increase with longer race durations, this finding is novel particularly when compared to previous work demonstrating an increase in age of peak running speed with increased race distance (Zingg MA, Rust CA, Rosemann T, Lepers R, Knechtle B (2014) Runners in their forties dominate ultra-marathons from 50 to 3,100 miles. Clinics (Sao Paulo, Brazil) 69:203-211).

Major Compulsory Revisions:

Introduction

The stated purpose of this manuscript was to test ‘the assumption that the athlete’s age of peak ultra-marathon performance will increase with rising distance or ascending duration of a race’. This aim has been previously addressed in distance-limited events (Zingg et al Clinics, 2014). Thus, the novelty of this manuscript should be explicitly stated. Further, the rationale to analyze time-limited events should be developed given this has been studied previously using distance-limited events.

Additionally, the scope of the manuscript goes beyond the stated purpose. This manuscript also analyzes the participation trends in duration-limited ultra-running events. The rationale for this analysis should be further developed.

The first paragraph of the discussion states ‘the athlete’s age of pea ultra-marathon performance did not increase with rising race duration’. However, the next paragraph of the discussion states ‘there seems to be a trend that the athlete’s age of peak performance seemed to decrease from 48 hrs to 10 d in women but to increase from 6 hrs to 48 hrs in men’. These discussion points are somewhat contradictory. Statistical analysis should determine differences in athlete’s age of peak performance rather than speculation.
Discretionary Revisions:

Table 1 includes the symbol ‘*’, but does not define the P-value associated with this symbol.

**Level of interest:** An article whose findings are important to those with closely related research interests

**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