Reviewer's report

Title: Determinants of motor performance in middle childhood: the role of sociodemographic factors in a resource-constrained rural African setting

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Reviewer: Melissa Gladstone

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Kitsao-Wekulo P et al

This is a study which aims to establish normative standards for some motor performance tasks for children of 8 to 11 years and to examine correlates of motor performance. The study title reflects this second aim more than the first and it would help to clarify this. The study is conducted by using randomly selected samples of children from 8 to 11 years from schools within the Kilifi district in Kenya. Eight tests of motor coordination are used on this group to create normal values and nutritional status, socioeconomic status and school attendance levels are compared as correlates of ability.

The authors should be commended for such a clearly structured and well conducted study with good use of psychometric measurements and methodology which are well described to determine the characteristics of the motor performance in this group of children. The data look appropriate for the study. There are some points within the discussion and conclusions and limitations which might be useful to address and are mentioned below and I would describe as Minor Revisions:

Methods:

1. The authors discuss in the introductory paragraphs that there are few tests which focus on children after the infant and preschool period. They therefore justify the need for validated measures of motor development for school age children. It is therefore unclear from the manuscript why only children from 8 to 11 years were chosen and why children from above the age of five or six years were not chosen to take part in the study. There may be specific reasons, for example that this study is nested in another study where children only of these age ranges were being tested. This is alluded to when sample characteristics are mentioned as being described in another study by Kitsao-Wekulo et al 2012. It would however, be easier for the reader if this were explained more clearly. The limitations of this in creating normative standards of motor performance for school age children could then also be discussed.

2. Again, to clarify why Kilifi was chosen as a site for the study and to explain how well the randomised sample of children attending schools in Kilife (and the few not) represents the childhood population in Kenya as a whole might be
helpful. Could the authors explain whether the percentage of non-school attending children vs school attending children represents the norm for Kenya or Kilifi district?

3. The authors used the TQQ to identify any disabilities or serious health problems in children. The authors discuss that “when it was not possible to determine the presence of any impairment through the parental report or in cases where only milder concerns were reported, testing was attempted”. Could the authors be clearer about what this means e.g. did they do specific visual testing and if so, what tests did they use? If they did not, this might be mentioned in the limitations as visual function and performance may be a confounding factor in motor ability in these more complex motor tasks. And same with audiological testing? What tests were used for those where it was not clear.

4. It might be helpful for the reader to clarify what “children who were physically unable to perform the tests” means and what criteria were used for this.

5. Development of motor tests: Item pool creation – Did the authors use any other specific tools or assess any other batteries or was it mainly the Movement ABC? A further couple of sentences on this might be beneficial.

6. Data collection procedures: I assume that standardised techniques and standardised scales and height boards and training was conducted for the anthropometric data collection. Could this be mentioned? It may be in an already published paper?

7. In terms of socioeconomic status, it might be helpful for the reader to understand how the composite index of six indicators was chosen in relation to the literature on the subject (World Bank indexes of Socioeconomic status). A few references alluding to this might be helpful.

8. Area of residence vs. Schooling? Could the authors elaborate on whether area of residence was a confounder on school attendance or not? This may have been assessed but a line or so mentioning this in the results or discussion would be helpful.

**Level of interest:** An article of limited interest

**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