Reviewer’s report

Title: Comparisons of Intensity-Duration Patterns of Physical Activity in the US, Jamaica and 3 African Countries

Version: 2 Date: 4 June 2014

Reviewer: Amanda E Staiano

Reviewer’s report:

The authors provide a succinct, well-written manuscript. The background clearly justifies the need for examining physical activity in a variety of domains within a variety of cultures and across the socio-economic gradient, and the discussion nicely summarizes the findings.

Major Compulsory Revisions:

1. The association between SES and physical activity needs to be more clearly articulated in the abstract as well as the introduction.

2. Although the primary aim of the manuscript is to examine associations between physical activity and obesity across the epidemiologic transition, these results are not discussed until the sixth paragraph of the discussion and the final section of the results section. Only one paragraph of the results section is devoted to this research question, and the analyses do not thoroughly compare the associations between physical activity and adiposity across the five countries.

3. Further, only BMI is examined and not percent body fat, though body composition was listed as a variable of interest and BIA was used to examine adiposity (since BMI is a crude measure of adiposity). The manuscript should either be revised to expand upon the primary aim, or the aims need to be re-written to more accurately describe the results and emphasis of the paper.

Minor Essential Revisions:

Abstract

4. Background – Some key concepts need brief explanation, including “global PA movement,” “epidemiologic transition,” and “economic transition.” It should be clear early on that the authors are examining the decrease in PA across countries with increasing SES.

5. It should also be stated which countries are considered low, middle, and upper SES. Why are economic/national disparities in PA important to understand?

6. Methods – What do the authors mean that PA was examined by manual labor? Does this mean participants were stratified based on amount of manual labor performed, or was this a covariate?

7. What does “explored ecologically” mean? Include the tools used to assess PA (i.e. accelerometer and self-report), SES (i.e. self-report), and anthropometrics/body composition (i.e. weight, height, bioelectrical impedance).
Background

Methods
9. Page 6 – How was 7am to 11pm selected as the accelerometry range of wear time? Is this based on actual wear time? Could this skew results if some participants in some countries are more likely to engage in activity earlier in the day?
10. Did the individuals who had invalid or insufficient accelerometry data differ on major variables to those who were retained in the analysis?

Results
11. Page 9 – Comment on statistically significant differences in the descriptive statistics section (e.g. manual labor by site, obesity).
12. Page 10 – The comment “This might suggest real international differences…” needs to be moved to the discussion section and warrants further discussion.
13. Page 10 – Specify direction of difference for significant differences (e.g. higher MVPA in Jamaica and Seychelles among women).
14. Page 11 – What statistical test was used to justify the statement “men were 22% less likely to be engaged in manual occupations if they were overweight and obese”? Add this statistical analysis test to the methods and clarify in the results.
15. Tables – The tables provide a tremendous amount of information and the data are difficult to interpret. Use asterisks to denote significant differences among each country/site in order to make the significant differences more apparent. If the asterisks/notations are too cumbersome to read, then at least compare the countries to 1 standard (such as Ghana or the U.S.).
16. Figures – Likewise, the figures would benefit from including p values to notate significant differences within and between countries – for instance, differences among BMI groups within each country and across all 5 countries.

Discussion
17. The discussion is well balanced and adequately supported by the data.
18. Several grammatical errors throughout the manuscript.

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

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:

I declare I have no competing interests