Reviewer's report

Title: Association of Car Ownership and Physical Activity across the Spectrum of Human Development: Modeling the Epidemiologic Transition Study (METS)

Version: 2  Date: 4 September 2014

Reviewer: Shu Wen Ng

Reviewer's report:

Major Compulsory Revisions

1) The authors present the GNI per capita and HDI for each of the 5 countries represented in the study. However, the samples within each of these countries were quite specific, so those GNI and HDI may not actually reflect the samples’ characteristics. In fact we see this in Table 1 when we compare the household PPP adjusted income to the GNI values. The authors need to comment on this issue and consider creating a household level measure of income to GNI to allow for cross country comparisons. In essence it would get towards measuring how where a household stands relative to the “average” household in their country may be related to MVPA in the multivariate analysis.

2) Please at least briefly explain why in Seychelles monitors were not worn during sleep unlike the other countries.

3) Please explain how the partial days of data (participants were asked to wear monitors at all time over 6 complete and 2 partial days) were used given the 10+ hours of wear time being considered valid.

4) In the multiple imputation approach to derive income for missing values, the authors are assuming that debt does not exist. They should explicitly say so.

5) Was there no question asking about ownership of motorcycles/ mopeds or another forms of motorized vehicles that are not cars or trucks??

6) Why didn’t the authors also look at light PA or “lifestyle PA” levels (see Matthews, 2005) ? When thinking about the substitutes for cars/trucks, there are varying alternative modes of transportation like walking, cycling, taking public transit (tuk-tuks, buses, metro/subway, etc.) that are not necessarily moderate intensity PA.

7) The authors have also taken a very simplistic look at household car ownership and have not tried to account for who actually has access to the cars/trucks, and whether it is exclusive use, partial use, scheduled use, etc.

8) Overall, I am puzzled about the meaningfulness of the cross-country comparisons and the external validity of the findings given the vary select nature of the samples from each country. One potential way to allay this concern is based on my suggestion in comment #1.

Minor Essential Revisions
1) Table 4 should include notes that states what variables went into the multivariate models.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.