Reviewer’s report

Title: Associations of Physical Activity and Sedentary Behavior during Pregnancy with Gestational Diabetes Mellitus among Asian women in Singapore

Version: 0 Date: 20 Nov 2016

Reviewer: Michael Schmidt

Reviewer’s report:

While the association between physical activity and GDM has been thoroughly studied, this study adds to the smaller body of literature which has been conducted among Asian women and also examined potential modification by pre-pregnancy BMI. While the study has several strengths (such as a large sample size and multiple measures of glucose regulation) there are also several limitations which should be addressed and/or acknowledged by the authors. In particular, the authors need to do a more thorough job of describing the measures of PA and SED used in the study (details below).

Main Concerns

- Lines 126-127. More information in needed regarding the 24-hr diet recalls (when and how completed, how many days, how analyzed).

- Lines 130-131. The used of self-reported weight to calculate pre-pregnancy weight likely led to misclassification of some women in BMI categories. The authors should address this as a limitation in the discussion section or cite evidence of the validity of this approach.

- Lines 147-154. More information about the methods used to assess PA is needed. For example, what was the time frame being assessed (past week, past month, current trimester)? What types of PA were queried (work, household, leisure, transport, etc.)? Was there a minimum bout length for the activity to be included? Also, the descriptions of the different intensity categories do not make sense to me. For example, "light-moderate" intensity is described as leaving a person as tired while "moderate" intensity leaves the person exhausted. These descriptions do not make physiologic sense and, to my knowledge, do not coincide with any previous instruments.

- Lines 156-167. Activity classified as "light-moderate" was assigned a MET value of 3.3 and included in the overall estimate of health enhancing PA. However, if some of the activities reported by women were truly of light intensity (<3 METS), is it appropriate to include that activity?

- Lines 169- 172. What was the time frame for the assessment of SED/TV viewing (past week, past month, current trimester)?
- Lines 214-215. A positive trend p-value is shown in Table 2 but not mentioned in the text. Is this because it was in the opposite direction than expected?

- Results - Did the authors consider analyzing associations using PA/SED/TV viewing as continuous measures? Linearity would have to be assessed but the study would have more power but it wouldn't be restricted to the somewhat arbitrary categories used.

- Tables 2-4. There are p-values listed on the lines with the variable headings (PA, Sitting Time, TV). What statistical test do these p-values reflect?

Minor Concerns

- There are a fairly large number of grammatical mistakes in the manuscript. Most are relatively minor (e.g., leaving out articles such as 'a', and 'the') but others make it difficult to understand the authors' meaning. Here is a partial listing of the manuscript lines where these problems occur: 64, 91, 95, 97-98, 114-115, 124-125, 141, 173, 201-202, 268-270, 276, 282, 301-303, 328.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

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.

I am able to assess the statistics

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