Reviewer’s report

Title: An ecological comparison of diabetes in five black populations: Data from Modeling the Epidemiologic Transition Study (METS).

Version: 2 Date: 8 April 2015

Reviewer: Kaan Sözmen

Reviewer’s report:

I had the opportunity to review this manuscript, which compared blood sugar level and its determinants using data from a cohort study which is being conducted at 5 United States, Jamaica, Ghana, South Africa, and Seychelles. I have included my suggestions for the authors to consider.

Major compulsory revisions

1. Abstract: The aim of the study is missing. Please restructure last paragraph of abstract and mention aim. The last paragraph can be moved to the introduction part of discussion section, or can also mention it as a strength of this study.

2. Statistical methods section needs improvement. The authors should present the statistical analysis performed; such as correlation (pearson?, spearman?), multivariate linear regression (which determinants were included in the analysis), etc., the p value and which statistical software used is missing. Kernel density graph was presented but not mentioned in results but also in methods. All readers are not familiar with these graphs.

3. Results: In Table 1, descriptive statistics were presented and it is obvious that some differences exist between countries. However we can not interpret whether these differences were statistically significant or not. For example, row 226; “Ghanian women were the most physically active, while those from USA and Jamaica appeared to be the least physically active and most sedentery”.

I believe if you can make comparison between groups using ANOVA or Kruskall-Wallis followed by Mann-Whitney-U test depending on distribution characteristics of your data, it will enrich results section.

4. Results: correlations; While presenting correlations, the strength of correlation is more important than significance level. Hence, please add magnitude and direction of correlation coefficients (r value) to your results and mention whether the correlation is strong, medium or weak, and positive-negatively associated.

5. Results: regressions; I believe the authors made a multivariate linear regression, so the country variables should be entered as dummy variables; such as (Jamaica: yes:1, no:0) etc. If so, one country should be ommited from the analysis, because of high correlation. The name of Table 3 can be like; The association between fasting glucose level and determining factors according to multivariate regression. Table 3; BMI 95% CI is presented as (0.672-0.442), the low number should come first; (0.442-0.672)
7. The relationship between figures and results is missing. The figures should be mentioned at results.

8. Discussion: It would be beneficial if you can mention some of the limitations of the study.

9. The conclusion sentence is missing. At row 350; the authors mention: “to summarize, this study examined....., this sentence can be moved to first paragraph of discussion. A conclusion sentence like the one in your abstract should be added here.

10. Figure 2: Mean values of anthropometric measurements were given by countries, but country names are missing in the graph.

Minor Essential revision
1. Abstract: Abbreviations should be explained at their first use; such as CVD, PA, SES. Same goes all through the manuscript.
2. Number of decimals used while presenting mean values should be the same in all tables. In table 1 all values except HOMA-IR have 1 decimal.
3. Row 124: weight and height was measured as previously described—add reference here again.

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