Reviewer's report

Title: Gender and socioeconomic disparities in BMI trajectories in a middle-income country in the African region: a cohort analysis

Version: 1 Date: 15 May 2011

Reviewer: Jessica Jones-Smith

Reviewer's report:

Thank you for the opportunity to review the manuscript “Gender and socioeconomic disparities in BMI trajectories in a middle-income country in the Africa region: a cohort analysis. This work has the potentially to be an interesting contribution to the field, but it’s current form, it lacks sufficient detail to be able to evaluate the methods, results and conclusions.

Specific Comments:

Essential Revisions

Abstract:
1. Abstract should be revised to give sufficient detail on the study design, N, and statistical methods.

2. In the methods section of the abstract, the term population-based survey is vague. It is unclear whether these 3 surveys are repeated cross-sectional surveys or whether this might be a longitudinal cohort or panel study. Are some of the participants surveyed in all three years? What is the N for your study?

3. Additionally in the methods section, please include a brief description of the statistical methods used to generate the results.

Background:

4. The Background section lacks sufficient detail to clearly establish what has been done in the field, what the current gaps in knowledge are and how the current study might address some of these gaps. An updated literature search should produce several more recent studies that examine this topic in low- and middle-income countries.

5. The “cohort analysis” should be described in more detail—what exactly is it and what types of data are required. Please also provide a reference for this method. A comparison between repeated cross-sectional analyses and cohort analysis and the strengths of the cohort analysis over the repeated cross-sectional analysis should be elaborated on.

6. The primary research question and potentially some hypotheses should be
Methods:

7. The statements in the first paragraph should have references. (page 4)

8. Regarding the classification of occupation, what types of occupations are in the intermediate category? Can you provide a reference for studies that have used a similar classification of occupation?

9. The methods of the cohort analysis are unclear and need to be described in more detail. The reference to the study design in previously published work is not sufficient to allow the reader to understand how the current study was designed (page 4).
   a. The term population-based survey leads me to believe that these are repeated cross-sectional surveys, but it is unclear.
   b. The description of the cohort analysis leads me to believe that there are some individuals for whom anthropometrics were measured during all three surveys, but this is also unclear.
   c. Please provide the total N for the population based surveys and the N for the people who were included in all three waves.
   d. If there are people who were included in all three surveys, how were they identified?

Statistical Analyses:

10. A more detailed description of the procedures that are required for the cohort analysis is needed. A step-by-step description of the procedure would be useful.

11. Additionally, more detailed statistical modeling descriptions would be helpful. For instance was linear regression used to model the relationship between BMI and age? Were the predicted BMIs from this linear regression (including second degree polynomial) used in the next step?

12. Is the analysis that generates the SES and sex–specific predicted BMIs based on stratified linear regression models?

Results:

13. Since the BMIs are being predicted from the regression models, it seems necessary to assess how well the models fit the data, perhaps by including the proportion of variance explained in each of the models used to predict BMI.

14. The results would be more informative if they included numbers, such as the predicted beginning and ending BMIs for each group, or for some groups. Also the average rate of change for each of the subgroups would be quite informative.

Discussion:

15. First paragraph: I think it is important to distinguish between mean BMI and the predicted BMIs in the cohort analysis. You indicate that BMI increased in
each successive cohort, this seems clear for the overall mean in Table 1, but not as clear looking at the predicted subgroup levels in the Figures.

16. Without numbers presented in the results section (i.e., beginning and ending BMI for each subgroup and estimate rate of change) it is hard to evaluate statements in the discussion, such as whether BMI increased more rapidly in men and women with low SES across successive cohorts. Also please make the comparison group more clear in each of these statements.

17. The 4th sentence in the third paragraph of the discussion should have a reference (page 8).

18. The discussion would be improved by specifically addressing the age, period and cohort findings of your study and how these add to current knowledge.

Discretionary Revisions

Abstract

1. The phrase “social gap” is a bit awkward to this reader. I wonder if this could be replaced by “social patterning” or “differences based on socioeconomic status.”

2. The third sentence of the Results section is confusing to this reader due to the phrase “…high than low socioeconomic status…” Perhaps using saying “compared to” instead of “than” or some other wording would improve readability of this sentence.

3. The conclusion section of the abstract could be shortened to include only the most relevant conclusions directly stemming from the current study.

Background

4. Discretionary Revisions: There are several more recent studies than those cited that examine the time trends in SES-obesity relationship in lower income countries that the authors have not included in their summary of the literature. In particular Ziraba et al. (2010) specifically investigate this question in African countries.

5. Monteiro et al. ask a similar question in Brazil. In addition, Jones-Smith et al. (2011) examines time trends in the SES-obesity relationship in a cross-national sample (which includes some African countries).

Discussion

6. The intended meaning of “social gap” must be better defined. It seems that BMI is still socially patterned if high SES men have higher BMIs than low SES men. By social gap, do the authors only mean that the advantaged group (high SES) has better outcomes. Being more specific throughout the second paragraph could help clarify what exactly is meant.
7. Is race/ethnicity correlated with SES in Seychelles and in this sample in particular?

Figures
8. Perhaps including the BMI value for each point on the Figures would allow for easier interpretation.

Level of interest: An article of importance in its field

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 that I have no competing interests.