Reviewer's report

Title: Prevalence of cardiovascular disease risk factors among a Nigerian adult population: implication of income level and accessibility to CVD risks screening

Version: 2 Date: 27 January 2015

Reviewer: Samuel Oti

Reviewer's report:

Major Compulsory Revisions:
1. The limitations of the study are significant yet the authors do not mention them anywhere. Of major concern is selection bias since this study was not based on a random sample. No surprise therefore that in one of the study sites (KWALE) almost 60% of the participants were between 18-24 years of age. Addressing this with some kind of weighting in the analysis would have made some sense.

2. The statistical approach and the choice of tests are poorly described and justified and in some instances completely inappropriate. For example, why MANOVA test? Why not a multi-nomial regression of SES over CVD risk factors? Even the choice of variables (or lack thereof of the appropriate categorization) is highly questionable. For example, the use of continuous variables (e.g. BMI) without the corresponding risk categorization (e.g. into underweight, normal, overweight and obese) makes it impossible to makes sense of the public health implications of this study.

3. The sample size calculation is incomplete. Because CVD risk factors are known to vary by age and gender, at the minimum the sample size should have been stratified as such. This is why the WHO STEPS protocol mutiplies the minimum estimated sample size by 2 (for gender) and by 5 (for each 10 year age interval). Pluse

Minor Essential Revisions:
1. Too many typos and grammatical errors. E.g what does the prevalence of total cholesterol even mean?

2. See line 64: CVD is already the leading cause of death globally, not by 2030.

3. Write acronyms in full first time they are used.

4. IDF is used to classify blood pressure? (See line 121)? Why not ISH/WHO?

5. Define all classifications of risk factors in the methods section or submit a table as supplemental contents.

6. Who conducted the interviews and screening? Where they trained? What protocol did they use?

7. What referral services if any were provided to those who were eligible for treatment following screening?

8. Confidence intervals and p-values should be included in all results.
9. Figure 1 and 2 needs a different color scheme otherwise it is impossible to make sense of it in black and white. Not to mention that the crowdedness of the bars makes the figures visually unappealing.

10. Table 3 is difficult to interpret. For example what does a 7% prevalence of BMI among the Abbi participants mean??

11. Include a table with the model and manufacturer of the screening equipment (e.g. the stadiometer and "human" weighing scale) used. Are these validated equipment?

**Level of interest:** An article of limited interest

**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