Reviewer's report

Title: Prevalence of Hypertension and Associated Cardiovascular Risk Factors in an Urban Slum in Nairobi, Kenya. A population-based survey

Version: Date: 16 April 2014

Reviewer: Olarinde Ogunmola

Reviewer's report:

Text

Introduction:
1. A major weakness in this section is its lack of clarity in its research question(s), purpose and rationale. In my view, research questions would have set the direction of the argument(s), including findings and discussion in the Paper. As it stands, the Paper is not focused. This section need to end with a brief statement of what is being reported in the article. I assumed you assessed the followings:
   a) The prevalence of high blood pressure (hypertension) in adults in different age groups and sex in the slum
   b) Demographic and behavioural risk factors across age and sex groups
   c) Age and gender specific anthropometry and blood pressure
   d) High blood pressure (hypertension) and its risk factors correlate

If you agree with a-d or any additions; your results, discussion, conclusion, and recommendation should focus on them.

Methods:

We cannot know how representative is the sample. The authors’ were too brief on sampling technique, as it stands, it will be difficult to replicate the study. There is need to expatiate on how they arrived at the sample studied. Authors should also clearly state the number of villages in the slum, how many were chosen? By what criteria were they chosen? In addition, what were the yardsticks for including villages in each cluster? What were the projected populations of each village? State the number of household in each cluster, the average population in each household, and the response rate per household/cluster. These are
important issues that determine the probability rather than arbitrary selection. There is no statement about the consideration of power and sample. Because of these flaws, it is difficult to exclude the random effect.

The authors use random walk sampling (paragraph 1, line 10), this do not meet the conditions of probability sampling and are not recommended for household survey (see ref 11). Therefore, I suggest you acknowledge this as a limitation.

Please, can you provide a ref that scientifically justify three months stated in Paragraph 1, line 13, otherwise please, acknowledge as weakness or limitation. The environmental/life style influence of old habitat on new inhabitants of four months old can still influence some of the CVD risk factors being assessed.

Since the researchers said this is among the first published urban slum NCD survey report from Kenya, the study still should not be published with major flaws without applying the suggested modifications.

Results:
Tables are so many hence, boring; some are poorly titled. The followings are my suggestions:

Tables 3, 4 and 5 should be merged, and titled “Prevalence of Hypertension, Distribution of Categories of BMI, WC and WHR according to age and sex”. The subtitle in rows 2 and 3 are wrong. Row 2 should be blood pressure classification or categories – hypertensive, normotensive; row 3 should also be blood pressure classification or categories – Normal, pre-hypertensive, hypertensive (stage 1 and stage 2).

Table 6 is confusing. I don’t understand the group you regarded to as high blood pressure. By convention, everyone you assessed does not meet the diagnostic rule of being tagged hypertensive based on your single BP measurement even though, you stated this as a limitation in your study. Therefore, accepting the fact that in your study, anyone with higher than normal BP is hypertensive or pre-hypertensive bearing in mind that your BP classification is according to JNC 7 hence, I do not expect any category as high BP to exist. Based on these, I suggest you remove the category “high BP” from the Table except you can convincingly defend what the group stands for, and obviously not acceptable to be called “high BP”.

I don’t understand the difference between tables 6 and 7. Even though, Table 7’s title is confusing and not acceptable, it appears Table 7 is a repetition of part of Table 6. I don’t know the value of Table 7. I suggest you remove Table 7.

Discussion:
Please, the discussion is too shallow. More time should be spent in the discussion about the local relevance of these data and in the context of data from other neighboring areas or previous research in this area. The CVD risk factors are well researched in the western world, and a lot has been done recently in other parts of Africa, but the relevance of this subject to the developing world is interesting. For example, in paragraph 1 and 2, authors’ were just reporting findings as noted in the results, but did not interpret or give peculiar explanation for their findings.
Conclusion:
Authors’ abstract conclusion had more points that are missing in the main text conclusion, please revise.

Minor Essential Revisions
Title page:
Authors did not follow the journal formatting style please, correct as follows:
1) Full names are required, some of the names contain initials, please correct it.
2) No telephone number requested, please delete.
3) Keywords should follow abstract, not in the title page. It is advisable to use words outside those found in the title. Some of the words you provided did not occur as in Mesh eg “Hypertension/epidemiology” were found as separate words “hypertension, epidemiology”; some of the words do not even exist eg “hypertension correlates”. Please review your keywords as found in Mesh terms, and separate with coma rather than semicolon.

Abstract:
Please define abbreviations first before subsequent use.

Results – 1) Line 1, ….2061 adults (not adult)
2) Line 7, I suggest “waist circumference” should replace” waist line” if that is your intention.

Text:
Background: Please, change “introduction” to “background” according to the journal formatting style.

Methods: 1) Paragraph 2, line 14, please what do you mean by “at the point of normal expiration”? State clearly whether early, mid, or end-expiration, or was it at any point?
2) Please, state clearly your inclusion and exclusion criteria. Authors included those already on treatment for hypertension and diabetics. These will under report associated CVD risk factors, since it is expected that treatment in this individuals will include associated CVD risk factors. Therefore, I suggest that authors acknowledge this as limitations.

SPSS, please acknowledge the producer in parentheses.

Results:
1) Please, reconstruct Paragraph 1, lines 3-4, it appears to be confusing:
a) Authors provided information only on males and completely silent on females. I suggest you provide for both gender or only total (excluding gender parameters).
b) Check punctuations, and the sequence of the age range should be in ascending or descending order (please, apply this in reporting other data eg BMI)
2) Waist circ: Lines 1 and 2, please adopt male/female and not male/women.
3) P in P-values should be capitalized and in italics.

4) I expect Table 2a to be 2, since there is no 2b. Please, check the title punctuations or you add “for” after each “(95% CI)”. Add BP to the title since you have it in the Table.

5) No legend provided for some abbreviations in many of the Tables, starting from Table 1, please do.

6) Table 9, in the title, body mass should be body mass index.

7) I suggest you merge tables 11 and 12.

Discussion:

1. Paragraph 1, line 4, “…. low overall awareness of hypertension” should be “….low overall awareness of need for regular BP measurement”

2. Please provide ref for the statement in paragraph 1, lines 5-6

3. Paragraph 4, line 1, correct the grammatical error

**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:**

Declaration of competing interests:
I declare that I have no competing interests.