Author's response to reviews

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

Authors:

Mark David Joshi (joshingetich@gmail.com)
Richard Ayah (richardayah@gmail.com)
Elijah Kaharo Njau (dreknjau@gmail.com)
Rosemary Wanjiru (rwanjiru@yahoo.com)
Joshua Kyteesa Kayima (joshuakayima@yahoo.com)
Erastus Kennedy Njeru (eknjeru@gmail.com)
Kenneth Kipyegon Mutai (mutaikk@gmail.com)

Version: 4  Date: 3 October 2014

Author's response to reviews: see over
2nd October 2014

To The Editor BMC Public Health

RE: Revised Manuscript

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

I hereby submit our revised manuscript following the suggestions and comments from 2nd round of review.

We have hereunder provided, a point-by-point response indicated in red font, immediately after the individual reviewer’s specific comments/concerns. The indicated changes have been in the resubmitted manuscript and illustrations. We hereby submit 3 tables, 1 figure and two additional files (tables).

We hope that that meets with your approval.

Sincerely,
Mark D Joshi

Reviewer’s report
Title: Prevalence of Hypertension and Associated Cardiovascular Risk Factors in an Urban Slum in Nairobi, Kenya. A population-based survey
Version: 2
Date: 12 June 2014
Reviewer: Andre Pascal A Kengne

Reviewer’s report:

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

MAJOR COMPULSORY REVISIONS
The authors have submitted a revised version of the manuscript above.

1) I don’t know why the colleagues are choosing to be more dismissive, instead of using the reviewers’ comments to improve their work. The suggestion by the authors that the WHO STEP questionnaire was not designed to capture data on hypertension detection, treatment and control rates is very shocking. It can relate to anything else, but not the STEPs questionnaire. Questions 68-70 of the STEPS are about the history of diagnosed hypertension (and will provide data on the detection rate); Questions 71-73 are about on-going treatments for hypertension including lifestyle measures and will provide data for computing the treatment rate; while the BP levels measured during the survey will provide information on the levels of BP control among participants on treatment.

We had no intension of appearing dismissive to our colleague’s comments and have indeed found this reviewer’s suggestions particularly helpful.
With regards to including data on control rates, it is our opinion that screening a general population is not the most efficient method for establishing hypertension control rates. This is borne out in results as stated in our initial response, that “only 141 study subjects were detected to have hypertension and only 53 subjects had ever been prescribed anti-hypertensive medications”. Computing control rates from this subsample of 53 subjects was not deemed justifiable. We agree entirely that the availability control rates in our study would have greatly enhance the impact of our paper.

2) The authors further argue that their purpose was to determine the prevalence of hypertension, screening rates and correlates of hypertension. Are the authors really expecting to uncover correlates of hypertension different from those largely described elsewhere and using more robust approaches such as cohort studies? It is already known and widely admitted that the prevalence of hypertension is high and rapidly growing across Africa. Against this background, new studies on hypertension prevalence in this setting cannot afford not describe in details the detection, treatment and control rates and where possible their determinants. Only these aspects are expected to vary across setting, and by investigating them, the authors provide context specific evidence for action. I shouldn’t appear rude by suggesting that any focus on the prevalence of hypertension and correlate only is of little use. Reference 20 to 23 give some examples the authors could get inspiration from.

At the design stage of our study no data existed on prevalence and screening rates of hypertension among slum population in our region, and our reported high pre-hypertension rates have not been reported previously.

We agree with the reviewer’s view-point in the preceding comments and accept these as shortcomings of our manuscript.

Correlates of hypertension have not been previously reported among slum dwellers in Kenya, however we did not, in particular envisage uncovering anything new. Our data does however suggest that among the lifestyle correlates, physical activity is less of a determinant then is dietary factors associated with body mass status. Data of this nature we expect will allow for further study of social disruption/psychosocial stress and related factors as lines of study of determinants of hypertension and potential policy interventions in the control of hypertension in the unique situation of slum populations. We agree that a future cohort study would be the optimal design in this regard.

3) Perhaps the authors should be more specific about what screening/intervention targets they feel could be informed by their linear regressions models to determine the predictors of absolute SBP and DBP levels. What’s novel from those analyses?

In agreement with this comment and the regression tables (Additional files 4, 5 & 6) have been omitted.
4) If the authors feel that they should maintain the many tables, perhaps they should strive to present the full statistics everywhere. We have reduced the number of tables to 3 as suggested by majority of reviewers.

All the p-values showing 0.000 should be presentment as <0.001 This was our initial choice of presentation however another reviewer suggested we present exact p values.

b. In table 1, the p-value for comparing the age strata are also needed. This advice has been heeded and p-value provided in the table.

Furthermore both in this table and everywhere else, there is a misuse of IQR (interquartile range). IQR is a single number representing the distance between the 25th and 75th percentiles. I think currently the authors are showing the 25th-75th percentiles and should label it as such or Q1-Q3. The parenthesis should be detached from the proceeding numbers. We have revised the label to read as Q1-Q3.

c. Table 2: a single p-value should compare men and women across BMI categories and not 4 p-values as currently done; this also applies to age groups comparisons in the online tables. This table remains of no utility for the current study (just like the online only tables) as the same data in major way can be derived from Table 4.

This advice has been heeded and Table 2 and Table in additional file 1 (Age & Sex specific BMI Mass Indices, Total Physical activity and Blood Pressure) have been excluded.

d. Table 3: the p-value or men vs. women comparisons are also needed This has been provided as advised, in NEW Table 2..

e. Table 4: the way comparisons are done is really not capturing the most useful information from the data. At most the authors are comparing men and women within specific strata. Taking BMI as an example, what is of interest is whether using Normal weight as a reference, overweight and obesity are associated with higher risk of Hypertension. The useful OR therefore here are the OR for overweight vs. normal, and Obese vs. normal weight. This applies to other factors in the table. What is of interest is the risk across levels of the factors and not the risk across gender within each level of a given factor. For this, perhaps the authors should show only the age and sex-adjusted OR, and the multivariable adjusted OR. I can’t see why this multivariable adjustment model shouldn’t include BMI categories, diabetes status, physical activity and smoking.

The within category sex comparisons in Table 4 (NEW Table 3) have been omitted as suggested.
Table 4 (NEW Table 3) depicts the Odds of hypertension among body mass categories and diabetes adjusted for age, sex, smoking and alcohol use. Physical activity is excluded as it was not significant in the univariate analysis.

BMI and diabetes status are independent variables in this multivariate adjustment models

5) In the discussion, I am still of the opinion that the 3rd paragraph has little value, and if the authors still want to maintain it, perhaps they should review their statement on the superiority of central obesity over general obesity in determining the risk of hypertension. Strictly speaking, they haven’t compared the predictive utility of BMI and WC for hypertension risk in this study. Because of the high collinearity between BMI and WC, it is an expectation that one may cancel the effect of the other in the same multivariable models. This doesn’t imply that one is superior to the other.

Most of paragraph 3 has been excluded and in particular the statement on the superiority of central obesity has been expunged.

6) Other comments.
   a. The reference of the authors to the use of ANOVA and KW test to assess the trend in the method section is inaccurate. They didn’t assess the trend in this study and I am sceptical about the applicability of the listed tests for assessing trends. The multivariate analysis has been rewritten and trend analysis excluded from the analysis section and in all presented results.

   b. They authors may want to criticise the methods for quality control of theirs instruments in the limitation section of their paper. Done in manuscript under relevant section.

Level of interest: An article of importance in its field
Quality of written English: Acceptable
Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests: None

Reviewer’s report
Title: Prevalence of Hypertension and Associated Cardiovascular Risk Factors in an Urban Slum in Nairobi, Kenya. A population-based survey
Version: 2 Date: 17 June 2014
Reviewer: Mekoya Mengistu
Reviewer’s report:
Reviewer’s report
Title: Prevalence of Hypertension and Associated Cardiovascular Risk Factors in an Urban
Slum in Nairobi, Kenya. A population-based survey
Version: 2
Date: 16 June 19 2014
Reviewer: Mekoya Mengistu

Minor Essential Revisions:

Abstract
1. Result: consider punctuations/spacings:
   Eg. Line 4: space missing……. 59.3% had pre-hypertension.80 %......
   Eg. Line 5: space missing …..harmful alcohol drinkers;10% were current
   smokers..

Background: consider punctuations and/spacing
Paragraph 1
Line 2: space missing ....countries is rising rapidly.ise [1].Half…….
Line 3: space missing …..attributable to non-communicable diseases [2].By 2020
   it……

Paragraph 2
Line 2: space missing …countries [4].Hypertension……
Line 3: full stop missing at the end ..... artery disease [5, 6]

Paragraph 3
Line 2: spaces missing …more than 20 millionpeople are affected [7].In
   sub-Saharan.....
Line 3: correct the spacing and remove ‘in’ ....... and mortality in [6].The
   reported.....
Line 5: space missing ...............with advancing age. A recent study.....
Line 6: consider spacing....................suggested that untreated hypertension
   is.........

Line 8: space missing................ etiological risk factor [8].In Kenya there
Line 10: space missing:...... prevalence of 6.4% [ 9].A2008.......

Paragraph 4
Line 3: spacing missing between ‘in and the’........of 2.4% [11]. Inthe capital
   city........
Line 7: Consider spacing.....................report on the prevalence......

NB: Please have a meticulous line by line reading to consider similar punctuation
   and spacing errors all over the manuscript.

Result:
Blood pressure
Line 9: I recommend you to maintain consistency. For example ..... BP</=140/90
   mmHg .....should be BP # 140/90 mmHg.

Multivariable Analysis
Line 3: Consider the consistency ...........Advancing age (P = 0.001), higher BMI
   (p 0.001)
Please also have a meticulous line by line reading to consider similar consistency
   errors all over the manuscript

Discussion
Paragraph 1:
Line 15: remove the closed bracket and consider the spacing ........ an80%
   screen detection rate 23].

Paragraph 3
Line 2: please write in the expanded form unless the acronym is mentioned
   .............HTN
Paragraph 5:
Line 2: prehypertension should be written as pre-hypertension
Paragraph 6:
Line 1: check the correct word……………………….practises
References
Please amend your reference section according to the format of the journal given under the 'BMC-series medical journals - authors' checklist for manuscript formatting'
For example; you can use the following format:

We have undertaken all the above suggested essential minor revisions/corrections in the manuscript.

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

Reviewer's report
Title: Prevalence of Hypertension and Associated Cardiovascular Risk Factors in an Urban Slum in Nairobi, Kenya. A population-based survey
Version: 2 Date: 25 July 2014
Reviewer: Norella Kong
Reviewer's report:
REVIEWER’S COMMENTS 5 July 2014
1. Overall, the manuscript is much improved.

2. However, MAJOR COMPULSORY REVISION is needed wrt SPACING between words as per attached reviewed manuscript. This has been done.

3. p values # 0.000 should be written as p # 0.001. We have utilized the format recommended by: Statistical and Mathematical Presentation;The Cochrane Collaboration.

4. Tables and Figures:
a) Fig 1 – Change ‘sex’ to ‘gender’
Gender is a social construct. We are advised that Sex is the recommended usage.

b) Tables 1 & 2 should be reorganized such that:
(NEW) Table 1: Demographics across gender and hypertension status.
(Include Age groups, BMI, waist circumference and waist hip ratio - last 3 transferred from Table 2)
c) (NEW) Table 2: Behavioural risk factors across gender and hypertension
status. (Include Tobacco smoking, Alcohol consumption and Physical activity from Table 1)

For the clarity of our results Table 2 has been deleted on the recommendation of another reviewer.

d) Table 3 is OK.

e) Table 4 is not needed. Replace with Table from Additional File 4 to show the regression analysis results of the Beta coefficients for Systolic and Diastolic blood pressures.

Table 4 and been modified and importantly shows the multivariable risk factors associated with hypertension reported as OR across categories of BMI, Waist circumference, WHR and diabetic status. On this account we have chose to retain table 4.

On the suggestion of another reviewer (Andre Pascal A Kengne) we have omitted the regression tables depicting the beta coefficients. The following were the said reviewers comments: "a) The linear regressions to determine the predictor of SBP and DBP levels (Table 9-11) are sincerely adding nothing to the manuscript and should be left out.'