Reviewer’s report

Title: Epidemiology and Risk Factors for Hypertension in Rwanda: Implication for Non-Communicable Diseases Prevention and Control

Version: 0 Date: 05 Feb 2017

Reviewer: Fakir Yunus

Reviewer's report:

Study title: Epidemiology and Risk Factors for Hypertension in Rwanda Implication for Non-Communicable Diseases Prevention and Control

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Reviewer comments:

Overall, the study is interesting and well-written and provides relevant fresh insights on the HTN in Rwanda and its risk factors. Nevertheless, I have a number of suggestions for improving the manuscript.

* Abstract:

  o Conclusion: Please consider writing what you found in your study. I think, the way it is written here, does not indicate appropriately that HTN is a concern for Rwanda. You may consider to say, Given the high prevalence of HTN ……I suggest to re-write the conclusion.

* Keyword: the authors mentioned that 'hypertension', 'high blood pressure', is there any difference, how 'awareness' could be an keyword for this study.

* Introduction:

  o The authors mentioned that 'This study provides population-based national estimates of the prevalence and risk factors associated with hypertension in Rwanda.', so this should be reflected in the title. Please mention that this is an nationally representative study

  o Lit review is poor, I suggest the authors to do more lit review on HTN in Rwanda, its known risk factors, it's consequence on health, it's prevention…
* Methods:

 o Sample size and method section: would helpful, if authors consider to make a flowchart of the multi-stage sampling.

 o I strongly suggest to cite each of the definition mentioned here in the Definition and measurement of variables.

 o Which guideline the survey followed to collect biochemical sample, please cite.

 o It is great that the authors rightly mentioned the detail of measuring blood pressure. Please cite if OMRON M4 Digital 54 Automatic blood pressure monitor and CardioChek PA has been used elsewhere in research.

 o It is not clear what are the variables assessed in this study including the outcome variables, and how they were captured. I suggest to write a separate paragraph explaining the variables that assessed including the outcome variables. For instance, how did they define semi-urban areas, level of education- is it completed? What university and high, which institute is here meant by 'high'.

 o Also justify why the authors choose to capture those particular risk factors, is there any previous relationship with these factors (height, weight waist circum..lipids… etc.). I suggest to justify and cite accordingly.

 o Data analysis, also would great if authors explain the variables that been re-categorize from the original dataset.

 o The authors mentioned that 'multivariate logistic regression was conducted for all variables of interest'- it is not clear what are the variable of interest??? Also, write a few sentences on which variables and why you put those in the final model.

 o The authors did not mentioned about those HTN patients who are already taking antiHTN medicine and their BP is now in control. This may lead to an underestimate the results.

* Results:

 o P8 L173, the author mentioned 'a doctor'- please make it clear that they are the registered physician or they are village doctors
The authors mentioned that 'Among respondents who were hypertensive, 22.1% self-reported that they had been previously diagnosed by a doctor while more than 75% were unaware of their status.' - first of all, I did not find it in the tables. The authors later discussed about it, but failed to explain how data was collected on this issue. It is indeed an important finding.

Table 1: I find it very difficult to match if the total % is 100. Table 2 has been not been appropriately written. For instance, 'the prevalence of hypertension increased with increase in BMI from 20.3% to 28.4% among overweight and obese respectively'. I understand the authors ran chi-square test to measure the association. Please write the interpretation in correct way. Moreover, rest of the results in this table in poor written.

Table 2: what did the author mean by 'χ²=6.32' in the overall in the table 2

Table 3 & 4: Please write the exact number rather writing 'more likely' when you explain the regression model. Question remains, how much more?

Table 3 & 4: I suggest to write each of the variables you analyzed, should be written in the results both the significant and non-significant variables. The authors should not be biased only the significant results.

* Discussion:

It seems that the authors did an another lit review in the discussion. It is poorly written. The authors should be discussing their findings and then do the lit review to support and/or discrepancies with other research articles in the similar context. The authors should consider to re-write and discuss each of the variables in this way.

P10 L213 214, please the statement is incorrect and difficult to claim such conclusion. It reads like a causal relationship are there, however, the authors did not investigate this phenomenon in this study. The authors may claim that the low awareness may because of the inadequate public health intervention ……

* Conclusion:

Please avoid mentioning the number/percentages in the conclusion section.

Please write clearly what you found.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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Please complete a declaration of competing interests, considering the following questions:

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