Reviewer's report

Title: Pattern of blood pressure distribution and prevalence of hypertension and prehypertension among adults in Northern Ethiopia: disclosing the hidden burden

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Reviewer: Olebogeng Majane

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Overall the paper is aimed at addressing two important aspects namely the pattern of blood pressure distribution among adults, and to determine prevalence of prehypertension and hypertension in Northern Ethiopia.

The findings are not novel however important and interesting as they expand on the limited knowledge regarding the state and prevalence of hypertension in developing countries.

Major Compulsory Revisions:

1. The prevalence of obesity with BMI of 30kg.m-2 and above (the obese group) was never indicated in the paper. Also indicate which gender group was more obese in rural, urban or both areas. This information is crucial to better understand and correlate the higher SBPs observed in males with obesity.

2. No mention of study limitations in the discussion or elsewhere in the paper.

3. It appears worthwhile noting that the prevalence of hypertension and prehypertension is slightly higher in males when compared to females both in rural and urban residents. This deserves a brief discussion. Could this be attributed to behavioural risk factors including cigarette smoking or khat chewing (Cata edulis Forsk) in males, high salt intake? Perhaps women are protected by hormonal factors.

4. About 19% of the study population was hypertensive (table 2, those older than 50 years of age) or 18.1% (abstract) of which 11.6% were women. Did the author collect data on menopausal status among the women to control the potential effect of menopausal status on the risk of blood pressure? In the discussion or introduction, the author should comment on the potential mechanism(s) that causes hypertension with aging.

5. Tobacco smoking history and alcohol consumption have been previously associated with high blood pressure and consequently in the current study participants were instructed to refrain from smoking half an hour preceding BP measurements. Accordingly, data on tobacco smoking history (previous and current) and alcohol consumption (mild to heavy) could enhance the strength of this paper and need to be addressed. See: Guo X. et.al. Tex Heart Inst J. 2011;38(6):643-52.

6. Multiple linear regression analysis could be used to identify which variables are the strongest or independent predictors of pre-hypertension and hypertension in this population which would then guide which variable(s) to use to stratify subsequent analyses.

Minor Essential Revisions (ref. original submission):

1. There is some inconsistency in the abstract. Some sections are written in italics others not.
2. The sample size and percentages in the abstract are not exactly the same as data presented in table 2. of the results section.
3. Page 4, line 11 and 12: Units for BMI - the “2” should be superscript
4. Page 5, under distribution of mean systolic and diastolic BP, edit: … and female (...) Vs Rural male (...) should read “vs. rural male”
5. Space missing: SBP(systolic blood pressure) and DBP(....). In the same paragraph, DBP of urban residents (female CI: 75.4-77.4) should be 75.4 ± 77.4
6. Page 7, line 16: Space missing: ... such18.2% should read such 18.2%.
7. Page 8, line 7: Typo- remove a comma before closing the bracket (113.9 ± 14.3,)
8. Find words “guide lines” and “back ground” in the paper and replace with “guidelines” and “background” respectively
9. Page 10, reference 14. The year of publication is incomplete “200…” should be 2001

Discretionary Revisions:

1. Provide examples of data acquired from the interviews with participants regarding their medical history.
2. For clinical correctness, it is a common practice to write BP without decimal (in text, table and figure) example, a mean SBP of 111.7 ± 18.3 should be written as 112 ± 18.3.
3. Since the paper focuses on BMI which is an index of general adiposity I missed some discussion on recent data in the literature regarding the use of central adiposity (waist-to-hip ratio and waist circumference) as a better correlate to hypertension and a better predictor of cardiovascular related diseases. See examples:

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

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