Author's response to reviews

Title: Hypertension awareness, treatment and control in Africa: A Systematic Review

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Editorial Office
BMC Cardiovascular Disorders

Dear Editor,

We thank you for giving us an opportunity to revise and resubmit our manuscript “MS: 9210059999688508 - Hypertension awareness, treatment and control in Africa: A Systematic Review”. We have provided responses to all the comments that we received. We have also further checked the manuscript and references are formatted according to the requirements for BMC Cardiovascular Disorders.

RESPONSES TO COMMENTS

Competing interests:

Manuscripts should include a ?Competing interests? section. This should be placed after the Conclusions/Abbreviations. Please consider the following questions and include a declaration of competing interests in your manuscript:

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Non-financial competing interests

? Are there any non-financial competing interests (political, personal, religious, ideological, academic, intellectual, commercial or any other) to declare in relation to this manuscript? If so, please specify.

There are no competing interests and this has been stated in the manuscript.

EDITORIAL BOARD COMMENTS:

Associate Editor:

1. Please state limitations of using only one database for this review, as many thorough systematic literature reviews use multiple databases (e.g. EMBASE, Medline, Cochrane Reviews)

This limitation has been stated in Discussion Paragraph 1 Sentence 1 as advised.

2. Please state units for prevalence in Table 1 (I assume %), and ensure formatting of the 4 columns associated with prevalence is very clear.

These units (%) have been stated in the table and the table reformatted.

3. Please state the criteria for how the variables? treated? and ?control? were measured in papers included in this review. Were there minimum standards for blood pressure treatment and control measurement that allowed studies to be included in this review? If so, what are they?

Treatment was described as the percentage of those subjects who were aware of their diagnosis of hypertension who had received pharmacological therapy whereas control were those who had had treatment with their blood pressure at the survey being 140 diastolic and 90mmHg systolic. This is stated in the methods section. These definitions formed the basis for inclusion of studies in the review.

Reviewer 1: Alexander Jenson

Overall, this paper is a well-written and systematic analysis of hypertension in Africa, a useful and needed synthesis of many different papers on this important topic. It fills a unique place in the literature.

Minor Essential Revisions

1. Make sure that the references are all within the sentence? sometimes the references are after the sentences.

This concern has been taken care of.

2. Introduction, paragraph 2, sentence 1 ? the JAMA article you reference does not make this claim, but instead it is made in the WHO report that the JAMA
article discusses. It would make more sense to cite the WHO report "Reducing risks to health, promoting healthy life? rather than the JAMA article.

We have revised reference 6 to reflect the original World Health Organisation (WHO) report.

Hypertension is the driver of the CVD epidemic in Africa where it is a major, independent risk factor for heart failure, and stroke and kidney failure (6).

3. Introduction, paragraph 3, sentence 3? Include a space in ?2007found?. Also consider revising the sentence.

This sentence has been revised to make it more understandable.

In 2007, Addo et al published a systematic review which showed extensively varying prevalence of hypertension with higher prevalence rates in the urban than rural areas in Sub-Saharan

4. Methods, paragraph 1 ? Please comment on methods for assessing hypertension. Were there any inclusion or exclusion criteria for studies based on how hypertension was assessed? Did you include studies that only measured BP once, twice, with a manual vs automatic sphygmomanometer? If there were no criteria, please justify.

The review included studies that measured blood pressure at least twice before deciding hypertension status. We included studies that measured blood pressure using both automated and mercury BP machines. This has been clarified in the inclusion/exclusion criteria.

5. Methods, paragraph 1? do you mean control is less than 90mmHg systolic? That is the cutoff used by the WHO for grade 1 hypertension.

Yes, we meant <90mmHg. This correction has been made.

6. Methods, paragraph 2 ? insert space into ?texts of?

Space has been inserted.

7. Methods, paragraph 3, sentence 2 ? Was there a threshold or statistical significance for factors that ?predicted?? Were there criteria for which factors, ie p<0.05 in a multivariate logistic regression? Please comment on how methodologically factors were assessed for inclusion/exclusion.

The threshold statistical significance for factors that predicted awareness, treatment and control was p<0.05. In addition we have reported odds ratios of the significant factors.

The threshold statistical significance for factors that predicted hypertension was a p-value < 0.05. We also recorded odds ratios in those publications that reported them. Owing to the heterogeneity of the study designs and the lack of reported confidence intervals in most the studies, a combined analysis of the reported data could not be done.

8. Please recheck your results of awareness, treatment and control in Table 1. Speaking anecdotally from our study (Jenson et al), it is cited incorrectly with
regards to sample size. The total is 469 with 307 females and 162 males, not 776 total with 307 females. I have not examined the other studies but please recheck to make sure those are accurately entered as well.

All the results have been double checked and appropriate corrections made. In particular, Jenson et al has been amended.

9. Also please recheck the ?reason? column. Again speaking anecdotally our study showed significant gender based differences in awareness, treatment and control, with women having higher rates of awareness, treatment and control. This again would help if there was a systematic method for inclusion of predictive factors, as the included studies all used statistical means of proving factor association.

The reason column has been changed to associated factors, and appropriate associated factor captured for different studies including Jenson et al.

10. Discussion paragraph 2 sentence 2 ? This statement could use a citation, referencing reference 8 (Gu et al) and 9 (He et al).

This has been done

DISCRETIONARY REVISIONS

1. Methods paragraph 2 sentence 3-5 ? It may be helpful to comment more on what factors prevented you from disaggregating certain studies. Also, could it be possible to compare rural vs. urban studies en-bloc? This may provide another avenue for analysis.

It was difficult to compare rural vs urban studies as a number of publications included both segments of society. This heterogeneity prevented such analysis.

2. Results paragraph 1 ? consider revising with single list of excluded studies rather than multiple short sentences that seem repetitive. You could say? We excluded six studies because?., 8 studies that?., etc. etc.?

This revision has been done to prevent repetition.

3. Results paragraph 3 sentence 4. national wide survey could be nation-wide. Revision made.

4. Results paragraph 6 sentence 1 ? it would be helpful to remind readers what the definition of ?awareness? is again here.

A reminder has been included as the first sentence of results paragraph 6.

4. Results paragraph 7 sentence 3 ? you mean treatment rates, not control rates.

Yes, we meant treatment rates. This has been rectified.

5. Discussion paragraph 2 sentence 4 ? place the citation after this sentence (McAlister et al) as the reference makes this claim as well.
6. Discussion paragraph 3 ? You make the claim that universal coverage improves diagnosis and treatment of hypertension. It may be helpful to comment on the difference between the coverage model and the current nationalized health care coverage that exists in many of these countries, such as Tanzania and Kenya who both subsidize care and treatment at government clinics and provide some care free of charge. The fact that there aren?t enough of these free resources doesn?t mean the governments don?t have a similar ?universal coverage? model.

Most nations have no nationalized health insurance, so most Africans pay out-of-pocket for their health expenses, which are supplemented somewhat by a few free services from government and donor organizations. About 80% of this funding focuses on infectious disease treatment with HIV/AIDS control efforts taking a lion’s share of this funding. Chronic non-communicable diseases have been relatively neglected. This discussion has been made in the manuscript and a reference cited.


We have quoted Pereira M, Lunet N, Azevedo A, Barros Differences in prevalence, awareness, treatment and control of hypertension between developing and developed countries.

8. Conclusion sentence 1 ? what do you mean ?targets of control?? There is no earlier comment on what set target there is for control ? ideally its 100% of treated ? is that what you mean? You could revise to say ?high levels?.

The target of control is a blood pressure of blood pressure of <140/<90 which reduces the risk of cardiovascular complications rather than a set percentage level of control (in percentage)

Reviewer 2: Akilew Awoke

Minor Essential Revisions: Methods section

1. Why authors considered only pharmacological therapy for already diagnosed hypertensive patients who were aware of their status, I mean why patients with known hypertension but who were on non pharmacological therapy were excluded?

All the studies considered described control with pharmacological therapy perhaps because this is a more demonstrable way of therapy. This was adopted to achieve some homogeneity. Admittedly, non-pharmacological therapy is an important way of controlling hypertension and indeed a first line for
pre-hypertension. We have included a statement under the methodology section to explain this.

2. Authors are needed to have consistent definition for controlled hypertension as it may vary from country to country otherwise need to follow standard definitions.

Different authorities (CDC, WHO, ESC) have been unanimous in defining the levels of control as Controlled hypertension is defined as SBP <140 mm Hg and DBP <90 mm Hg among persons diagnosed with hypertension. It has been recognised that control of blood pressure to this level reduces the incidence of complications. This was the basis upon which we considered studies that defined control in a like way.

3. Additionally, how did the authors address the various definition of hypertension in different literatures searched? That is, the inclusion criterion should be clear and has to mention as well.

The definition of hypertension was a criteria of inclusion and it was defined as a subjects with a blood pressure of >140/>90mmHg and/or on anti hypertensive medication. This has been clarified in the methods section.

4. How the authors did compared literatures with different definitions of hypertension?

The definition of hypertension was relatively homogenous (as described in 3 above) ) and we did not have the challenge of dealing with different definitions.

Result

Minor Essential Revisions

1. The type of instruments used to measure hypertension, and the frequency of blood pressure taken should be reported

These have been mentioned; both automated and mercury blood pressure measurements were considered.

2. Table1 is not yet completed and headings of the figure should be below the figure

Table 1 has been revised

3. Authors are expected to cite references after??9.3% in an Ethiopian population?

This reference has been cited

Yours sincerely,

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