Reviewer's report

Title: Prevalence and determinants of a normotensive blood pressure in a German population based cohort of hypertensive study participants

Version: 2 Date: 3 September 2012

Reviewer: Idris Guessous

Reviewer's report:

Using data from the SHIP-0 and the SHIP-1, Van den Berg et al. aimed to identify the prevalence and determinants of normotensive blood pressure in a German population of hypertensive study participants. The objectives are of interest, but the methods used and the way results are presented and discussed have to be reconsidered before publication might be considered. Throughout the manuscript, there is a major lack of statistical inferences using standard procedures (statistical tests, measure of dispersion, etc).

A. Major Compulsory Revisions:

0. Throughout the manuscript (including the abstract), rates are sometimes inappropriately used to describe prevalences.

BACKGROUND

1. Reference 1 is in German. I would suggest providing (key) references written in English for the international readers of the journal.

2. Suggest to stress that the prevalence is highly dependent on age and gender.

3. Third and Fourth paragraphs are slightly redundant.

4. How does the prevalence of 23.1% reported in the last paragraph fit with the previous information that “compared to other countries, the prevalence in Germany is high:...28%...38%...42%”. It seems contradictory.

5. Last paragraph belongs to the methods section.

6. In the methods section, information on participation rates, means of recruitment and recall (letters, phone, language restriction) is missing.

7. Parts of the third paragraph of the methods section belongs to the results.

METHODS

8. Which devices were used to measure blood pressure? Did the devices change between SHIP-0 and SHIP-1?

9. How were diabetes and the other risk-comorbidity defined?

10. Age range should be defined. It seems that participants younger the 24 years were also included in the study.

11. All (including association analyses) statistical analyses must take into account the sample-design-weights, not only the prevalence of hypertension.
12. Description of the logistical regression models are totally missing in the Methods section.

RESULTS:

13. Throughout the manuscript, measures of dispersion must be provided, moreover because several stratified analyses rely on really small sample sizes.

14. Statistical differences need to be tested and p values for significance must be reported throughout the analyses. These tests must also take into account the complex design.

15. Suggest providing in Table 1 the N from which estimated are derived for each cells and to reconsider the number of cells compared; sample sizes of some cells are probably very small (see Table 5). This will of course be translated by very large confidence intervals.

16. From the text, information on chronic disease seems to be available on only N=1754. It is not clear how Table 6 provides information on yet N=1761 stratified by risk-comorbidity?

17. Differences reported in Table 3, 4, 5, etc (and mentioned in the text) must be tested.

18. The precision of the proportion derived from the cohort of N=10 must be provided.

19. Description of the logistic models does not belong to the Results section.

20. The major limitation of the interpretation of table 7 and of the corresponding section of the manuscript is the lack of adjustment for blood pressure at baseline. In addition, the models do not take into account whether participants at baseline were treated or not and the type of treatment. Most of the determinants reported in Table 7 might be confounded by the disease severity; i.e. the level of high blood pressure (expressed as mmHg or combination therapy) at baseline.

DISCUSSION:

Although the information on adherence is clearly missing in the study, yet the major part of the discussion focuses on it. I would suggest spending more time discussing the results for which the authors have some data on. Moreover, the content of the discussion should be reconsidered once the differences between groups tested statistically.

B. Minor Essential Revisions:

Suggest using proportions “of” throughout the manuscript.

Methods: “The” main goal; population-based data

Suggest not reporting % and N of male if this same information regarding female is given in the same sentence (third paragraph of the methods section).

Sociodemographic data as well as the presence of diagnoses and risk factos WERE assessed

Suggest defining the WHO/ISH classification.
Reconsider the first sentence of the paragraph after Table 1 insertion. Reference message error in the paragraph following Table 5 insertion. Suggest using “determinants” instead of “correlates”. Suggest using “Hypertensive” patients instead of hypertension patients.

**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:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests