Reviewer’s report

Title: Control of cardiovascular risk factors and its determinants in the general population-
Findings from the STAAB Cohort Study

Version: 0 Date: 03 Sep 2017

Reviewer: Elizabeth Breeze

Reviewer’s report:

Thank you for your manuscript which paints a somewhat depressing picture of uncontrolled risk factors in this area of Germany and brings home that we need to find ways of overcoming the hurdles to improve the situation.

My comments mainly concern the flow of the document. The objectives and methods could be set out more clearly so that the results flow from them. Also there are some inconsistencies which may be typing errors and sentences where I suggest more precision in the wording so as to avoid ambiguity. I asterisk the methodological points and more substantive comments.

Introduction

1. *In some countries well over 90% of the population are registered with GPs. It would be useful to know more about how you consider that a population sample has advantages over one in a GP setting.

2. The aim is given in the abstract as "to investigate determinants and quality of adequate risk factor control in the general population free of CVD". It is not clear here what is meant by "quality". In the Introduction the aim as given as "assess the prevalence of adequate control of cardiovascular risk factors as well as determinants of accumulation of insufficiently controlled (word missing?) in people without established CVD covering varying degrees of CVD risk ...." Please clarify what is meant by the phrase "covering varying degrees of CVD risk". It is not clear from the aims as stated that you are going to compare risk factors by category of SCORE although this may be what you are trying to convey in the last phrase I queried. Also, the first part of the aim looks at adequate control and the second part inadequate control. I think it is easier to absorb the whole picture if both refer to adequate control (and the text written up accordingly) or both to insufficient control.

Methods

3. *The data collection process is well set out. I wondered why >5% risk of fatal CVD was considered high. It applies to all men aged over 60 (nearly all those aged over 55) and most women so is not a good discriminator. The other option would be to use some form of age-specific quantile to categorise into low, medium and high.
4. The results include descriptions of subgroups of blood pressure, lipidaemia and glycemic control. It would be helpful if the methods section forewarned that these would be used. It might even be worth a table summarising the definitions of uncontrolled for each of the 6 aspects, together with their subgroups.

5. How were the covariates decided?

6. The data analysis section does not mention the comparisons by SCORE category and the purpose of this. The SCORE includes bp, cholesterol, age and smoking so one would expect these to differ by SCORE category. On the other hand, I was surprised that the high risk category had such high percentages with certain risk factors given that the lower threshold of that SCORE category was 5% risk of fatal CVD in 10 years.

7. *The separate tabulations by men and women show, not surprisingly, that they differ in their distributions of uncontrolled factors and of the covariates. Did you consider looking at whether the predictors of 3 or more uncontrolled factors differed for men and women? It does not necessarily follow that they will but the strengths of the predictors may differ.

Results

8. For me a neater way of summarising Table 1 would be to state first all the factors that were more common or higher in men, then the ones more common or higher among women and finally the ones where there was no substantial difference. I wasn't sure that p-values were important here… a judgement of substantiveness might suffice given that this is not your main model. I'd be interested to see the complete distribution of the number of uncontrolled risk factors.

9. The paragraph starting line 135 concerns only the biological elements and the subtitle could reflect this. I would find it easier to follow if there were at least three paragraphs rather than one. Also, I would find it easier if the sequence was the same in each case, e.g. number & % exceeding the thresholds by measurement, the number & % of those who were unaware of this, the number & % on medication and the number and % of those on medication who still exceeded the threshold.

10-year risk

10. Line 169. words missing before "such as"?

11. Line 174. Are the numbers in the brackets the right way round?

12. *Table 2. What is meant by "independently of awareness and current pharmacotherapy"? Were these factors controlled for and, if so, how, given that those on pharmacotherapy are a subset of those aware of their condition presumably. I assume the odds ratios compare those with 3-6 insufficiently controlled risk factors with those with 0-2 as the reference group. The title
gives the impression that the 3-6 group provide the reference. Did you consider using income as a continuous variable?

Discussion

13. The second sentence of the first paragraph is a key sentence in summing up the major worry revealed by your findings.

14. There are many comparisons with other literature in the Discussion. Although not the norm I wondered if these would be more digestible if there was a table.

15. Line 214… would it have been possible to do some age-standardised comparisons or are the data not available to do this?

16. Line 223 and 228. You claim that your findings are in line with DIAB-CORE but I could not find with which STAAB statistic the 42.5% DIAB-CORE one, cited in line 228, is comparable

17. *Lines 230-1. I disagree with this sentence. While diabetics may not be well controlled, from those small numbers one does not have good evidence of this.

18. Line 234. Is this more than 50% of those with dyslipidaemia?

19. *Line 288-90. The widely varying estimates make me wonder what one is measuring in these studies. How reliable are they? Is it the populations that differ, that changes have happened over time, that the measures that are unreliable, or that the studies are low in power? Perhaps there could be some discussion of this variability.

20. Lines 305-6. As said above, isn't the first sentence bound to be true given the way SCORE is developed and the low thresholds used for a population that goes up to 69 years of age?

21. Line 310. I could not tell to what "the same" refers … 22% and 51% are rather different.

22. Did all the studies referred to here use the same categorisation of high risk… in the Belgian study what was considered very high risk?

23. Limitations. Thank you for noting these. I agree with them.

Conclusions…

24. The conclusions are generally fitting but is there not already a literature on barriers to awareness and adherence?
25. Line 338. I wasn't clear what is meant by "sex-specific" as separate analyses by sex were not done.

26. Line 384 Delete "and" before "are included"

27. Authors' contributions. Please check the grammar and spelling in this section.

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

No

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

Yes

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?
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I am able to assess the statistics

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