Reviewer's report

Title: Prevalence of the metabolic syndrome and its components in Northwest Russia: the Arkhangelsk study

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Reviewer: David Laaksonen

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The authors describe the prevalence of the metabolic syndrome according to three common definitions in 3705 Russians living in Arkhangelsk. They found that the age-standardized prevalence among women was 20 23%, whereas the prevalence was half that among men. The authors concluded that the prevalence of the metabolic syndrome is much lower among Russian men than in other European countries and the United States. They also conclude that the metabolic syndrome is not likely to be a major contributor to cardiovascular disease in Russia.

The paper as such is basically well analysed and written. That such data from Russia have been largely lacking coupled with the current epidemic of cardiovascular disease in Russia gives some value to this study. On the other hand, many studies comparing the prevalence of the metabolic syndrome according to various definitions have already been published since 2000. The value of the study would be greatly increased if the authors condensed the descriptive section of the prevalence of the metabolic syndrome and its components and analysed lifestyle and socioeconomic factors explaining the prevalence of the metabolic syndrome in this cohort. The authors state that such analyses are beyond the scope of the paper, but in my opinion the scope should be changed.

Specific comments

1. Methods. the first sentence needs to be rewritten.
2. Methods, 2nd paragraph. It would be important to know what percentage of the cohort participated through obligatory annual exams and what percentage were invited. it would also be important to know the percentages of students, workers and pensioners.
3. Methods. Were the subjects instructed to fast?
4. The authors refer to a study in Finland. Eastern Finland is correct, but not the province of Karelia.
5. The authors raise a point about appropriate cut-offs for waist circumference for the Russian population. The authors have the data to assess that possibility. The corresponding cut-offs for BMI and WC in the Finnish study to which the authors referred differed from the Glasgow study. The authors suggest ethnicity as an explanation. That is possible, but I suspect that other factors, such as
(occupational) physical activity, are more important for white Europeans.

6. Table 1. Data on smoking and alcohol intake should be given.

7. Give the age for which the analyses have been adjusted or standardised in Tables 3 and 6.

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

**Quality of written English:** Acceptable

**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