

## Reviewer's report

**Title:** Study of heart rate variability among Nunavik Inuit adults exposed to environmental mercury.

**Version: 2 Date:** 17 January 2008

**Reviewer:** Esben Budtz-Jorgensen

### Reviewer's report:

The manuscript is still not clear as to the sampling method used and the bootstrap method applied in the statistical analysis.

Sampling:

On page 5 it is stated: 'A proportional stratification by community was used as sampling method'

What are these communities? Were the 14 villages divided into a number of communities? Or is community the same as village?

It seems that a two-stage sampling method was used. In the first step a stratified random sample of households were generated such the probability of selecting a household from a given community was proportional to the community number of households. The text should be more clear.

In addition, on page 5, it is stated that 'the survey included all persons'. I guess this means that the target population was all 'all persons'  $\hat{=}$  not all persons were included in the sample.

Bootstrap method:

From the references it is clear that this is an appropriate method. However, the text is still unreadable. This method was only used to estimate the variance in different estimators. This should be emphasized. The first sentence  $\hat{=}$ ! all variables were weighted using the bootstrap method  $\hat{=}$  only holds for calculation of the variance in estimators. In contrast, when the parameters were estimated so-called sampling weights may have been used  $\hat{=}$  this should be clarified  $\hat{=}$  but these weights would not have been calculated using the bootstrap. Instead these should be calculated to reflect the sampling design used in the survey.

It is not quite clear whether the bootstrap method was used also to determine variances in regression coefficients  $\hat{=}$  I think it should. If the method was used throughout, I think it would be better to have the description in the end of 'Statistical Analysis'. At that point it will be clear to the reader which estimators are being considered, and then it would be logical to end the section by

explaining how the variances in these estimators were calculated. Furthermore, given the complexity of the bootstrap method and the fact that appropriate references have now been included, I think that a shorter description would be better  $\hat{\sigma}^2$  i.e. without mentioning the bootstrap weights.

It should be stated how to obtain the Methodological report by Rochette and Blanchet.

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**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.