Reviewer's report

Title: Is the Scottish population living dangerously? Prevalence of multiple risk factors: the Scottish Health Survey 2003

Version: 2 Date: 10 December 2009

Reviewer: Hoang Van Minh

Reviewer's report:

This is a well written paper and of public health interest. The question posed by the authors is well defined. The findings of this study are interesting and have important public health implications.

1. Major Compulsory Revisions
None

2. Minor Essential Revisions
÷ The data (dated 2003) are a bit old. Some justification for using the data are needed. Why did the authors not include the data from the 2 survey rounds (1995 and 1998)
÷ The authors should clearly state the reasons why the 5 risk factors were included. Why was blood pressure not included even though it is a very important risk factor and the data are available from the 2003 Scottish Health Survey?
÷ The aim of the paper was about behavioural risk factors but obesity data were also included.
÷ The description of the 2003 Scottish Health Survey was inadequate. It is important to know about the sampling strategy and sample size calculation, method for measuring physical activity, type of ethical approval, etc
÷ The paper needs to have comparisons of socioeconomic characteristics of the populations who responded to the 2003 Scottish Health Survey (67%) and of those who did not. Furthermore, as the full data on all five behavioural risk factors were available for 80.7% of the sample, it is important to report both similarities and differences between the populations who were included (80.7%) and those who were excluded in the analysis.
÷ Why all the socio-economics variables were included at the same time? Was step-wise approach applied in the model building process?
÷ Page 4- under the heading “variable”: is that correct to say “five lifestyle risk factors and obesity”
÷ Page 4- under the heading “variable”: smoking is not binary variable
÷ Page 5: Reference for Hosmer-Lemeshow tests is missing.
÷ What SIMD in table 1 is?
÷ What do the bars in Figure 1 represent? 95%CI? They look the same?
3. Discretionary Revisions

- 95%CI are needed for the figures in table 2
- Number of observation, R squared for the 2 logistic models are needed

- All the 5 studied risk factors are for chronic diseases, the authors may need to change the title in order to reflect this
- Table 1 is too busy. It can be split into 2 tables
- Interactions between individual and area variables are worth to be examined
- More discussions on policy implication of this study, e.g. what type of intervention (primary or secondary intervention) may be needed

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare that I have no competing interests