Reviewer's report

Title: Population Attributable Fraction of Smoking and Metabolic Syndrome on Cardiovascular Disease Mortality in Japan: a 15-Year Follow Up of NIPPON DATA90.

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Reviewer: Zubair Kabir

Reviewer's report:

Takashima and colleagues have examined an interesting topic of public health importance in an Asian-Pacific population. The findings are intriguing but the underlying message is loud and clear. The methodology has been adequately described, statistical techniques are appropriate and discussion is logical. Minor editorial assistance is essential. The study has both strengths and limitations. The strength of this study is its longitudinal nature. The authors have highlighted the study limitations and the main limitation is the non-availability of socio-economic data. However, I have the following main concerns to offer.

All Major Compulsory Revisions:

1. First, it is not clear why the authors did not use the Asia-Pacific Region cut-off for the BMI- this might have misclassified obese individuals as non-obese and thereof the probability of introducing a systematic bias in the effect estimates.

2. Second, it is also not quite clear which international definition for Metabolic Syndrome was employed

3. Third, the operational definitions of smoking status were not clearly spelled out. This limitation has to be discussed in the context of the adjusted HRs that were statistically significant in both sexes only among the smokers.

4. Fourth, it is not clear whether data on the duration and intensity of smoking history were available. If available, then the reasons for not factoring them into the models are to be discussed as well.

5. Self-reporting smoking history introduces recall and information biases that need to be discussed.

6. It could be interesting to see the results with an interaction term.

7. Finally, the results of table 4 are less counter-intuitive and more convincing from a public health policy perspective. Therefore, such findings need to be reinforced in the discussion section as well.

Level of interest: An article of importance in its field
Quality of written English: Needs some language corrections before being published

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'