Reviewer’s report

Title: Predictors of mortality of patients newly diagnosed with clinical type 2 diabetes: a 5-year follow up study

Version: 3 Date: 6 July 2010

Reviewer: Lianming Wang

Reviewer’s report:

The statistical analysis is correct and the results make sense. The paper is well written. I have only a few comments.

1. Please switch “at a young age” and “at an older age” in lines 8 and 9 on page 8 since the definition and interpretation do not match. In general it should be cautioned to use age as a predictor in Cox model. The use of “age of diagnostic” and the interpretation of its effect on mortality hazard are correct.

2. In the univariate analysis shown in Table 1, there seems a trend on the estimated three self-rated health effects (SRH), with worse health status having shorter (residual or remaining) life. This is as expected. However, this trend is not clear in the multivariate analysis and the Wald test of the equality of the three SRH effects does not reject the null hypothesis in Table 1. This may be due to the introduced confounding predictors in the model. The authors may want to consider fitting a constrained Cox model, in which the linear part is gamma_1 x_1 + gamma_2 x_2 + gamma_3 x_3, where x_1, x_2 and x_3 are all binary variables, x_1 takes 1 if the SRH is not better than good, x_2 takes 1 if SRH is not better than fair, and x_3 takes 1 if SRH is (very) poor. All the coefficients (gamma) are restricted to be nonnegative, and this model can be used to compare any people with different SRH categories. For example, exp(gamma_1) indicates the hazard ratio of mortality with good SRH versus that with excellent SRH, exp(gamma_2) indicates the hazard ratio of mortality with fair SRH versus that with good SRH, and exp(gamma_1+gamma_2) indicates the hazard ratio of mortality with fair SRH versus that with excellent SRH. In general, incorporate such constraint can improve model-fitting. The author may choose to ignore this since it will require too much additional work.

3. The word “CVD” is defined in line 10 page 3 but is first used in the last sentence of page 2.

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.