Reviewer’s report

Title: Description and prediction of the development of metabolic syndrome in Dongying City: a longitudinal analysis using the Markov Model

Version: 1 Date: 1 September 2014

Reviewer: Lee-Ching Hwang

Reviewer’s report:

The manuscript, Description and prediction of the development of metabolic syndrome in Dongying City: a longitudinal analysis using the Markov Model, is built Markov models to simulate and predict the Mets development. The authors used a database in the Health Management Center of Shengli Oilfield Central Hospital in Dongying City in China. They found that Mets occurrence mostly began with BMI more than 25 and dyslipidemia in young, however, began with hypertension or 2 components in elderly.

The methods and the described manner of this article are similar to previous report from Hwang LC et. al. (PLoS One 2013, 8(6):e67436.)

Some important weaknesses should be issued clearly.

1. Mets has different definitions from several institutes or countries. Please explain the reasons why you adopted this definition that is not similar to international standards for MetS.

2. Please discuss inference errors that may result because of different definitions of levels of MetS components.

3. The characteristics of the study sample in Table 1. Why the means of age did not increase with the track year? Will person loss of follow-up affect the interpretation of transitional probability?

4. The annual transitional probabilities in Tables were divided based on age/gender groups. Regardless of age and gender, isolated hypertension and isolated hyperglycemia component showed not transit to other component except its own, 2-C or MetS. This may be rare in reversible multistate Markov model for MetS. Please check whether the original information is correct.

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

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