Reviewer’s report

Title: Population attributable risk for diabetes associated with excess weight in Iranian adults: A population-based cohort study

Version: 1 Date: 20 July 2007

Reviewer: Teruo Nagaya

Reviewer’s report:

General

The report by Hosseinpanah F et al is based on a long-term community-based follow-up study (TLGS) in Iran, and the data used here is preliminary results at baseline and first (3.6-year) follow-up examination.

The authors aim to show impact of obesity/overweight on development of diabetes mellitus (DM) in an Iranian population, and they present dose-response relationships between BMI and incidence of DM during 3.6-year follow-up. However, there are some major questions/deficits in the data analysis. The data analysis should be revised.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Statistical methods:

1. Even though the study is community-based study, follow-up ratio is too low [4728/(4122+4728) = 53.4%]. How do authors invite subjects to follow-up examinations? Are there any reasons for the low follow-up ratio? To check selection bias in 3.6-year follow-up examination, baseline characteristics should be compared between 4122 non-followed subjects and 4728 followed subjects.

2. Baseline prevalence of obesity in women is about twice of that in men (29.8% vs. 15.1%). On the other hand, incidence of DM is almost equal between sexes (73/1961 = 3.7% in men vs 109/2767 = 3.9% in women). These results indicate that effects of obesity on incident DM is considerably different among sexes. However, the authors have no attentions on sex-differences in their data analysis, and analyze the data together both sexes. First, baseline characteristics should be presented by sex. Subsequently, the follow-up data should be analyzed in each sex. When the results in men and in women are similar with each other, the two data sets can be combined.

3. The data set from 4728 followed subjects is ‘paired' data; baseline and 3.6-year follow-up in all the subjects, and output (dependent variable) is dichotomous. Logistic regression analysis should be used for the data to estimate odds ratio and its 95% CI.
4. Anthropometric 3.6 year-changes (Table 2) in 182 subjects with incident DM may be just changes with aging. The changes in the 182 subjects should be compared with those in the other subjects without incident DM.

5. Does 'linear-by-linear chi2-test' mean Mantel-Haenzel chi2-test?

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Others:

6. The 3.6-year follow-up is not enough to show reliable results in prospective studies. The TLGS study has been setup in 1997, and follow-up interval is 3.6 year. So, the study may finish 2nd follow-up examination by now. The authors are possible to include the 2nd follow-up results.

7-1. Trends in prevalence of obesity/overweight in Iranian general population should be cited (Examples: National Survey for health/nutrition). Has the prevalence in Iran been increasing or decreasing?

7-2. The study subjects are selected from Tehran's urban population. Does the prevalence of obesity/overweight in the area indicate the prevalence in Iranian general population? To discuss attributable risk by obesity/overweight in Iran, the prevalence in Iranian general population should be used in the estimation of population attributable risk.

8. The data according to BMI-subgroups (Table 4) may not be essential for authors' aims.

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Discretionary Revisions (which the author can choose to ignore)

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

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

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

Declaration of competing interests:

I declare that I have no competing interests.