Reviewer's report

Title: Association of obesity with socioeconomic status among adults of ages 18 to 80 years in rural Northwest China

Version: 4 Date: 29 October 2014

Reviewer: Estrella Miqueleiz

Reviewer's report:

Previous review:

1. They don’t indicate the non-response rate. It would be interesting to add a table with the sociodemographic characteristics of the study subjects. OK

2. It would be interesting to conduct a logistic regression to see the relationship between obesity relationship and SEP adjusted for risk factors analyzed in the study, to see whether the differences observed between SEP and obesity may be due to differences observed between SEP and risk factors.

You have done a logistic regression between SES and obesity and in the other hand between SES and risk factors adjusted by sociodemographic factors,

I would suggest to do a multivariate logistic regression between SES and obesity adjusted by risk factors.

3. It would be interesting to perform the logistic regressions by age group. It could be differences between the youngest and the oldest subjects. OK

   They have to put the reason that has made the different categories. OK

5. Page 7. Third paragraph (Line 164-165).
   They say that the prevalence is higher in women when the OR is 0.77. Error in interpreting the results. OK

   Comparisons with the results of other studies are confusing and do not give an idea of the prevalence of obesity in each area. It is recommended to restructure the paragraph. OK

7. Page 9. First paragraph (Line 211). It's necessary a reference when they say that in developed societies there is a negative association between SEP and obesity in women but not in men is given. OK

8. Page 9. First paragraph (Line 214). It is not clear whether it refers to the results of this study or the reviewed literature. OK
9. Page 9. First paragraph (Line 216). Mechanisms of SEP-obesity association. They have to delve a little more and put some other mechanism that has been studied in previous studies. OK

10. Page 10. First paragraph (Line 247). It’s necessary a reference when they speak of previous studies. OK

New suggestions:

1. With the new logistic regression suggeted, I would suggest to sumarize the tables. You can combine the tables 3 to 6 in two tables because if you adjust the regression by age, you don’t need to separate the data.

2. I suggest to revise the redaction for the text. In some cases, it results a bit confuse, there are too much data in the text.

3. Line 274: I suggest to put more actual references.

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

**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.