Reviewer's report

Title: Dietary factors associated with the Metabolic Syndrome in Brazilian adults

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Reviewer: Ana Elisa Rinaldi

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Original article
Title: Dietary factors associated with the Metabolic Syndrome in Brazilian Adults
Date: 30 November 2011

1. Is the question posed by the authors new and well defined?
Yes, this manuscript showed interesting results and the benefits of a healthy diet for metabolic syndrome. The issue of this study is not new, but in Brazilian population, the relationship between components of diet and the metabolic syndrome is poorly elaborated. The main issue of the study was well described in the introduction and in discussion.

2. Are the methods appropriate and well described, and are sufficient details provided to allow others to evaluate and/or replicate the work?
There are many critical points and issues in the methods description and results. These points are pointed out below (Subjects and methods section):

a. Individuals: the select of sample it was no well described. How these individuals were selected? Is it a convenience sample? The authors wrote: “a sub-group of participants clinically selected for the lifestyle modification program “Mexa-se Pró-Saúde” (Move for Health)”. Did these individuals already participate the lifestyle modification before this study conducted?

b. Statistical analysis: the authors cited the Shapiro Wilk test to evaluate the normality of data. But, most of time, variables with high variation like food groups do not show an normal distribution. In table 1, the standard deviations of food groups, variety diet, fibers, saturated-mono-polyunsaturated fat, cholesterol were very high and it is not a good way to show the data. Instead of using means and standard deviation it is better using median and interquartile interval. And I suggest using Mann Whitney test to compared the individuals with and without MS for these variable described above. In the abstract, the authors described that “logistic regression (Odds ratio) was performed in order to observe the odds ratio for developing MS according to dietary intake”, but in the statistical analysis section the authors wrote: “linear regression (odds ratio) was performed”. In the table 2, the authors used logistic regression to estimate the odds ratio because all the variables were in categorical form and it is not correct to use linear
regression for categorical variables. The authors used to models in the logistic regression using age, gender, TCV and MMI. But, I suggest to create a third model with family income and educational level, because in table 1 there was a significant difference in individuals with and without MS for these variables. Another important point is the use of correlation Pearson to evaluate the relationship between numbers of components and the intake of macronutrients and pyramid food groups. If the macronutrients and pyramid food groups were not described in a normal distribution, the Pearson correlation must be substitute for Spearman Correlation. But I suggest to remove the figures 1 and 2, because the value of correlation coefficient (r) were very low.

c. Results: In table 1 I suggest to describe the percentage of all the categories of variables marital status and education level. The other points of results were discussed in the topic above.

3. Is the interpretation (discussion and conclusion) well balanced and supported by the data?
Yes, the discussion was well supported.

Minor essential revisions
Suggestions to change some words:

Backgroups
- The word “Contrarily” in the fourth paragraph it would be better if is substitute by: “On the other hand”.
- I suggest to rewrite the sentence “Of the environmental factors, diet is one of the main aspects related to MS increase in the population” to a direct order: “Diet is one of the main aspects of the environmental factors related to MS increase in the population.”

Methods
It would be better to change “schooling” for “educational level”. It is useful years of schooling.

Level of interest: An article of importance in its field

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

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests' below