Reviewer's report

Title: Association between dietary patterns and metabolic syndrome in a sample of Portuguese adults.

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Reviewer: Italia Di Liegro

Reviewer's report:

The paper by Fonseca et al. reports that no association could be found between dietary patterns and the prevalence of metabolic syndrome (MetS) in a community sample of Portuguese adults.

The question addressed by the Authors is of great interest, given the increasing prevalence of MetS all over the world. In the effort to identify possible correlations between diet and MetS, the Authors chose an “a posteriori” approach based on validated semi-quantitative food frequency questionnaires. The data collected in the interviews, together with the anthropometric measurements, blood pressure measurement and fasting blood sample analysis, were statistically treated.

The study involved a large number of participants and the Authors took into consideration a large body of features. The methods used for the statistical analyses sound appropriate. I do not feel adequately qualified, however, to assess them in detail.

Title and abstract, as well as the “Background” and “Participant and Methods” Sections are well written and convey some important information.

On the other hand, the “Results” and “Discussion” Sections should be improved in order to allow the reader to fully understand conclusions and for convincing him/her that dietary patterns are not associated with MetS.

Major comments:

- Are the dietary patterns described in Table 1 significantly different? The relative proportions of carbohydrates, total fat and proteins, as reported in Tab.1, seem indeed very similar, the only differences being a higher intake of saturated fat and cholesterol in the group defined as “in transition to fast-food”, and of cholesterol as well as alcohol in the male cluster defined as “red meat and alcohol” (alcohol intake is actually high also in the “fish” group).

- What does it mean “in transition to fast-food”? In general, the main characteristics which define each group (including the “healthy” one), thus determining group separation, should be pointed out.

- In Table 2 means of BMI are in the range of overweight (BMI) for all the groups. This aspect should be discussed.

- In Tab 3, the definitions “high” and “low” should be better defined.
-principles underlying adjustment for age, daily energy intake, education etc. should be briefly outlined.
-In general terms, the distinctive features emerging from each table should be pointed out and discussed.

Minor comments:
- Some of the numbers reported in the text (Results) are not identical to the ones reported in Tab 4; for example: pag.8, last two lines: the “low fruit and vegetables” and the “red meat and alcohol” DPs were associated with a higher WC than the “healthy” pattern (OR=1.85 95%CI: 1.15-2.95 and OR=1.45 95%CI: 1.01-2.09, respectively). In Table 4: “low fruit and vegetables”: 1.88 (1.17-3.01); “red meat and alcohol”: 1.45 (1.01-2.07).
- Reference style is not fully in accord with the Instructions for Authors.
- Reference 14 lacks the year of publication

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**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