Reviewer's report

Title: Clustering patterns of physical activity, sedentary and dietary behavior among European adolescents: The HELENA study

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Reviewer: Dilek Aslan

Reviewer's report:

Dear Editor,

I have read the article entitled "Clustering patterns of physical activity, sedentary and dietary behavior among European adolescents: The HELENA study" carefully. My thoughts and recommendations are listed below:

1. The study is a well designed research on a very important topic.
2. Discussion part could be shortened to be more understandable. It is long and a little bit confusing in this format.
3. There are very assertive statements in the discussion part. For example, the researchers found no significant BMI differences found among the five defined clusters. To clarify this statement, some results were used (BELOW).

"It could be that the consequences of showing low quality diets and unhealthy activity and sedentary habits are not yet present in this age category. Also, previous studies have shown potential bias to under-reporting of dietary intake among adolescents, especially in overweight and obese subjects [44]. In the literature, a consistent association between dietary behaviors and obesity during childhood, has not been found [45]...."

However, there are also studies which express the relationship between eating habits and high BMI. For this reason, using such results in the discussion could have improved the document.

4. Finally, 75% was the participation rate. It is not possible to generalize the results though this is a descriptive study. For this reason, the low percentage of the participation rate should be added as a limitation of the study.

Hopefully these recommendations could help the authors to improve the manuscript.

Best wishes,

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

Quality of written English: Acceptable
**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'