Reviewer’s report

Title: Active living neighborhoods: Is neighborhood walkability a key element for Belgian adolescents?

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Reviewer: Charreire Hélène

Reviewer’s report:

This is an interesting paper. It is well describes the relations between built environment (based on walkability indicators) and physical activity behaviors (with objective and self-reported measures) among young in European context (Ghent-Belgium). The relations between socio-economic environment (neighborhood scale) and individual physical activity were also analyzed (moderate dimension). The discussion aims of this paper at relevant subjects and makes a good contribution to knowledge.

I have specific comments and questions for consideration.

1. The definition of the different level (individual/environmental) could be improved in the article. For example in the abstract (methods section) the authors could add “individual” in the sentence: “To analyze the association between neighborhood walkability, neighborhood SES and [individual] physical activity.” In the same way, p6, in the sentence: “the interaction between neighborhood walkability and SES in youth”: the authors could precise if SES is “individual or neighborhood level”

2. Abstract.
   - The author could add “among Belgium adolescent” in the sentence “are associated with PA and wether…”
   - In the conclusion section, please replace “only among low-SES adolescents” by “only among adolescent living in low SES neighborhood”

3. In the introduction section (p4), please the authors add some references about walkability index (“neighborhood considered walkable […] residential density” such as:

4. As exposed in your introduction section, adolescent is characterized by decline in PA and especially in girl and gender differences has been reported in previous studies. The relation between built/social environment and PA behaviors have it
been tested by genders? The results would be similar?

In the same way, the authors explain that all analyses were adjusted for SES individual characteristics (parental employment and educational attainment of mother and father). But, as exposed in your methods section, self-reported data included age and gender. Do the analyses have they been adjusted by these demographic adolescent characteristics?

5. Scale 7-8: The description of your neighborhoods is very interesting and clear but I would like to see more said about your groups. Could you give information about inhabitants of neighborhood (average or density of inhabitants) issue to the combination of statistical sectors and explain the reason to define groups of statistical sectors (number of subjects by area for the analyses?)

6. p9, could the authors replace “groups of statistical sectors” by “neighborhoods”

7. Table 1. Please add the number of subjects sample in table 1

8. Table 2: improve the form (table rows)

9. Table 3. Add information about adjustment (variables) in the legend of table 3

10. Corrected form of the text and table (error probably in the translation file)

Level of interest: An article of importance in its field

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'