Author’s response to reviews

Title: Neighborhood-based PA and its environmental correlates. A GIS- and GPS based cross-sectional study in the Netherlands

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Author’s response to reviews:

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Subject: cover letter to the editor and reviewer

Dear Editor and David Shoham,

Thank you for reviewing our manuscript. By following up on the comments that you posed, we feel that the manuscript has been improved. In this letter we respond to the comments.

All changes we made in the text in comparison to the previous version of this manuscript were highlighted in grey in this revised manuscript.

Comments and responses

1 Comment of the editor:
We note that you have not included author Martin J Dijst within your ‘Authors Contributions’ section. Please ensure to include this author and their contributions within this section.

Response:

We saw that we forgot to include the abbreviation of the author Martin J Dijst in the ‘Authors Contributions’ section, whereas he did helped to draft the manuscript and critically reviewed it. Hence, we have addressed this comment by including this author and his contributions in this section (see Authors Contributions).

2 Reviewer comment:

The authors have been responsive to all concerns raised in the initial review, except the one regarding selection bias. In their discussion of the limitations they do acknowledge that their selected population is likely not representative, but provide no assurances it is not a fatal flaw of the study.

The authors need to demonstrate that the sample represents the Dutch population. They could do this by comparing their sample to the general population or at least the people who were invited. They also need to compare those who were eligible for the final sample to those who initially agreed to participate. If the authors can demonstrate that the sample is unbiased then I will not have additional concerns. If there is evidence of bias, the authors will have to address and mitigate this bias.

Response:

We aimed to select a study sample that was representative for the source population: adults aged 45-65 years living in four selected neighborhoods of the cities Maastricht and Rotterdam. Hence, we randomly invited adults in the age of 45-65 years living in these four selected neighborhoods. When comparing the characteristics of our study sample to those of the source population, our sample appeared to be representative in terms of sex and age. Regarding ethnicity, we saw that both western and non-western immigrants were underrepresented in our study sample compared to the source population, especially in Rotterdam. As we did not have access to information on BMI or education on the neighbourhood level, we compared the characteristics of our sample to
those of the total Dutch population. This showed that lower educated adults were underrepresented in our study sample, as were adults with overweight or obesity.

The underrepresentation of ethnic minority groups, lower educated and overweight/obesity may have affected our results. However, since the literature on correlations of these factors with physical activity is inconsistent (i.e. indicating positive, negative as well as null associations, see e.g. Bauman et al. 2012; Choi et al. 2017), it is unclear if and how exactly this may have affected the results. Moreover, we have considered the possible association of these factors with PA by adjusting our analyses for a range of confounders: age, gender, BMI, education, ethnicity, having a car, having children, dog ownership, city, and attitude towards PA. Also, as the focus of this paper was not to compare PA behavior of sub-population groups (e.g. autochthonous vs. western or non-western immigrants, or healthy weight vs. overweight or obese adults), we do not think the under representations seriously affected our results. We added extra information on this topic to the discussion section.

Kind regards,

Marijke Jansen