**Reviewer’s report**

**Title:** Physical activity types and risk of dementia in community-dwelling older people: the Three-City cohort.

**Version:** 0  **Date:** 24 Dec 2019

**Reviewer:** Derya KAYA

**Reviewer's report:**

BGTC-D-19-00825

Physical activity and risk of dementia in community-dwelling older people: the Three-City cohort

This is a study on some kind of physical activity and risk of dementia from three different cities in France with a median follow-up of 4.6 years. The authors concluded that the 5-year risk of dementia was significantly and negatively associated with the household/transportation physical activity subscore. Indeed, this conclusion is not so surprising since the two activities, the so-called as household/transportation activities are a must that are questioned in the dementia practice when questioning daily living activities (or as in Lawton Brody Instrumental Activity of Daily Living (IADL) scale). However, with a high number of patients aged over 70, this prospective study can be considered for publication. There are some points that are needed to be clarified:- Firstly, I am not sure whether the title covers the content accurately, it sounds a wide, and not a focused title. Indeed, the most important point that is wanted to give to the readers that transportation and household activities are negatively associated with dementia. - I wonder the history of fall in the cohort. It will be better whether the authors can include the number of falls within one year or presence of history of fall in a time period in the adjusted analysis. - Although the authors have used hierarchical disability indicator, how many of these patients had gait and balance problems, walking assistance, etc.- It seems that the only excluded patients are those who had dementia. If not, please clarify. - PA was assessed with the Voorrips questionnaire. The household/transportation activity part includes ten questions. What is the most effective question for the risk of dementia? does it differ between female and male pts.? - The interaction between the household/transportation activity sub-scores and sex was not significant. Was this result an expected one? Please comment on this. - What is the reason for a significant association between dementia risk and the second class of the household/transportation activity, but not the third class? Please explain it in detail.

**Are the methods appropriate and well described?**

If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**

If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below.
If your reply is yes to any, please give details below.

I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments
which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal.