Reviewer's report

Title: Very low neighbourhood income limits participation post stroke: Preliminary evidence from a cohort study

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Reviewer: Jiming Fang

Reviewer's report:

In this manuscript, the authors report the results of very low neighbourhood income associated with participation post stroke after adjusting for gender, perceived health, walking ability, emotional well-being. These results are of clinical interest and the authors are correct in saying that the need for further investigation of the relationship between very low neighbourhood income and participation post stroke, and the importance of close follow-up of stroke survivors living in very low income neighbourhood.

Major Compulsory Revisions

1. My major problem with this manuscript is that there are only 6 patients in the very low income group. Statistically, the regression models (Tables 3-7) might not be stable because of the very small sample size in this group.

2. The results of the present study is consistent with the authors' previous publication on Archives of Physical Medical and Rehabilitation (2014; 95:262-8) via the same study cohort (n=67). The already reported results have indicated that income (in thousands) was significantly associated with change in RNLI score. Patients living the richer neighbourhood were more likely to gain RNLI scores (i.e., participation) compared with those living low income neighbourhood. The authors need to address clearly the new findings that differ from their previous paper.

3. Another exploratory analysis that may be suggested is to assess difference in participation between the tertiles of neighbourhood income (i.e., divide the study cohort into three groups according to their income percentiles, low, intermediate and high, and using intermediate group as reference). This may help in clarifying whether the impact of neighbourhood income limits participation in low income group solely or also might have “does-effect”.

4. The participation rate was low, 35%. Is it because that many patients did not consent to join the study? If so, please explain how to deal with the potential bias data due to consent issue.

5. Is it possible for authors to indicate the missing data percentage by neighbourhood income groups (e.g., tertiles, see above) to examine if the neighbourhood income is associated with the participation rate?
6. Table 1: is it possible to add standardized differences and p-values? Consider to add 2-minute walk, emotional well-being, and perceived health, plus their p-values to Table 1. This may help readers to see unadjusted differences in these variables between patients with very low income and those with other income.

7. Table 2: Indicate the statistics in brackets, is it SD?

8. Tables 3-7: Consider conducting GEE model adjusting for the repeated tests to investigate the impact of income on RNLI.

Minor Essential Revisions

1. Page 5 (Lines 110-111)
   The authors pointed out that people living in the lowest income quintiles in Ontario, Canada experienced more severe strokes according to Kapral et al. (2012 Neurology; 79:1200-7). However, it is said “There were no significant differences in stroke severity by income groups, based on either mean Canadian Neurological Scale scores or the proportion of patients with Canadian Neurological Scale scores greater than or equal to 8”. Consider revise this paragraph according to Kapral’s original paper.

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

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' below