Reviewer's report

Title: Environmental mobility barriers and walking for errands among older people who live alone vs. with others

Version: 1 Date: 18 September 2013

Reviewer: Peter Croft

Reviewer's report:

I enjoyed this paper - the results are interesting, However there are a number of changes needed.

1. Major compulsory revisions.
   a. A major issue is the extent to which people who live alone are selectively different in ways that will affect walking - e.g. healthier - than those who live with someone. The authors consider this in the discussion, but have collected data on possible confounding factors that might allow at least partial analysis of this. Although the measures are listed in the methods, and the adjustment referred to in the discussion, there is no reference to these in the analysis section of the methods or the results section. Better specification of the possible role of the confounders, the way in which they were analysed and the extent to which the results allow the authors to conclude that confounding is unlikely to explain the results would greatly strengthen the scientific account of the research.
   b. The other issue of selectivity is the extent to which all persons in this study were a highly selective group of the population of this age. Although this will not necessarily affect the internal associations the authors describe, it may have a major effect on the conclusions being drawn - especially those with public health policy significance. I really want to know if we are seeing results about a health small minority of the population or not since this will really influence my interpretation of what to do as public health policy. The authors hint that they are selective - they are all from an RCT, they all had to have a minimum mobility, and in the discussion it is revealed that people of low or high activity were excluded. There should be a clear section describing the extent of these limitations and an estimate of the selectivity of the population.
   c. The major concern in this paper is how the results are discussed and the conclusions drawn. Much of the explanation of the results appears speculative and this should be clearly labelled as speculation - however there are also places where the authors could be more diligent in their search for supporting evidence for their speculation - for example, have there not been sociological studies of older people which would shed light on how they behave if alone or with a partner with respect to likelihood of walking errands or using transport? If there have been no such empirical studies, then some speculation is reasonable but it should be clearly labelled as such and some indication of the type of research needed to establish the truth of any particular explanation being given.
The importance of this becomes clear in the final conclusions which I would regard as completely unjustified - the results are interesting but could equally well be concluded as saying it is healthier to live alone and closer to a city. My feeling is that it would be better to summarise the population to which these results might apply (how selective?), the likelihood that there may still be health state as an explanation (how much confounding?), and the possibility that it may be more important to target people who live with others for physical activity promotion than to target environmental barriers. Then discuss the research that would unravel this and why it is important to get at the truth.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests