Reviewer's report

Title: Environmental barriers, person-environment fit and mortality among community-dwelling very old people

Version: 2 Date: 20 June 2013

Reviewer: margaret G stineman

Reviewer's report:

Exciting paper. The authors did a great job in responding to reviewer comments.

Major Compulsory Revisions

1- The weighted barrier analysis is based on the sample specific prevalence of functional limitations in relationship to the occurrence of environmental barriers. The barrier item-specific P-E fit score does not appear to be specific to the individual's particular functional status and abilities. Because the measure does not appear to be person-specific some barriers important to one person may not be important to others rendering the meaningful interpretation of a raw count difficult. This lack of person-specific P-E fit needs to be clarified and acknowledged. If I have interpreted the measure correctly this should be addressed as a limitation.

2- The authors report an interesting unexpected finding i.e that the presence of a higher number of indoor barriers showed a slightly protective effect on mortality. You provide a number of possible explanations for this finding. Use of population-determined rather than person-specific P-E fit might be another major explanation. As for example a narrow doorway will not be a problem for a person who uses a wheelchair or possibly other mobility equipment but not for a low vision person. The raw count will have a great deal of noise in it with regard to its relevancy at the individual level of analysis.

3- The authors note correctly that health differences might be the strongest explanation. The statement as appears in the discussion that the model was adjusted for “the most meaningful health differences” does not appear justified. The variable list includes depressive symptoms, cognitive function, functional limitations and use of mobility devices. Health conditions known to be highly associated with mortality such as cancer, cardiovascular disease and diabetes are not included in the model. Thus the explanation of residual founding from non-measured health conditions remains one of the most important explanations of findings.

Minor Essential Revisions

Discretionary Revisions

More might be made of the importance of the type, or profile of barriers rather
than count. Risk of falling may be an important risk factor linked to lack of hand rails as well as to high shelves.

**Level of interest:** An article of importance in its field

**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