Reviewer’s report

**Title:** Predictors of two forms of attrition in a longitudinal health study involving ageing participants: An analysis based on the Whitehall II study.

**Version:** 2  **Date:** 5 August 2012

**Reviewer:** Liz Zelinski

**Reviewer’s report:**

1. Is the question posed by the authors well defined?
   Attraction is a major concern in longitudinal research and identifying issues related to missingness is critical to providing generalizable conclusions about longitudinal outcomes.

2. Are the methods appropriate and well described? (major compulsory revisions)
   The results section of the ms is very difficult to follow with essentially no information about the methods used. I know that medical journals move methods to the final sections of the narrative, but many of them provide at least some preview information about the approach used. In this case, the statistical modeling approach used should be described in broad outline.

   I do have a conceptual concern about the relevance of nonresponse for understanding findings if the participants respond at a later time. The analysis as I understand it evaluated nonresponse at a given occasion as the outcome. This suggests a cross sectional analysis that aggregates over occasions. However, it is not completely clear how this would affect actual longitudinal trends in the data. This may be a disciplinary issue. I am a psychologist and would be most interested in permanent dropouts, as estimates of cognitive ability change do not vary much in those who may miss a data collection occasion but return later. The value of longitudinal analysis in my view is to estimate change patterns rather than to examine a series of cross sectional snapshots. I would think that a comparison of the withdrawers with the permanent dropouts (the last occasion of participation) would be of interest.

3. Are the data sound?
   The data are undoubtedly reliable but important information such as reason for withdrawal or for nonresponse in those who return is not available. This dampens enthusiasm for the findings.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition? Yes

5. Are the discussion and conclusions well balanced and adequately supported by the data?
   The methods are transparent with respect to limitations for answering the question. However, no specific hypotheses about predictors of missingness are
presented nor any recommendations for steps to reduce missingness other than oversampling, which is very difficult for certain participant groups, is discussed.

6. Are limitations of the work clearly stated?
   Yes

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
   I believe that they are not tapping the attrition literature that has existed for many years in longitudinal studies conducted in the US. For example, in the Baltimore Longitudinal Study of Aging, Seattle Longitudinal study, etc.

8. Do the title and abstract accurately convey what has been found?
   Yes

9. Is the writing acceptable?
   yes

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

no competing interests.