Reviewer’s report

Title: Relationship Between Multimorbidity, Demographic Factors and Mortality: Findings from the UK Biobank Cohort

Version: 0 Date: 04 Oct 2018

Reviewer: Harm van Marwijk

Reviewer's report:

As multimorbidity is common and associated with higher mortality, and the relationship with cancer and cardiovascular mortality is unclear, the authors studied the relationship between multimorbidity and all-cause, vascular and cancer mortality in a middle-older aged population and explore the impact of demographic factors on the relationship between multimorbidity and all-cause mortality. The project supports the concept of multimorbidity, although clinically, I must say that the results are less surprising. I liked the paper.

In the introduction, we read: 'A systematic review ... found that demographic factors 75 such as age, gender and socio-economic status were the most important determinants of multimorbidity [2].' They then jump to: 'However, the impact of demographic factors on the relationship between multimorbidity and mortality has not been studied in great detail.' Ok, but why do we urgently need to know more about that? If find papers with several research questions need to focus very much on the structure so as not to confuse the reader.

Their conclusion is that multimorbidity was consistently associated with higher all-cause, cancer and vascular mortality. Multimorbidity may also have a greater impact on all-cause mortality in middle aged as opposed to older population. This bit is probably the most interesting for a general readership. I would suggest the authors to perhaps focus more on the second research question.

The paper reads well otherwise.
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.

Yes

Are the conclusions drawn adequately supported by the data shown?
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Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
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I am able to assess the statistics

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