Reviewer’s report

Title: Factors related to health-related quality of life in older people with multimorbidity and high health care consumption over a two-year period

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Reviewer: Anders Sköldunger

Reviewer's report:

Review Health-related quality of life in older people with multi-morbidity and high health care consumption over a two-year period 20190311

The article set out to explore the health-related quality of life in older people with high consumption of care and multimorbidity. This is a very important and subject and it needs thorough investigation. The manuscript though, would benefit from a proper review. I have some general points and some minor editing issues.

* Title: it states you are examining older people with high health care consumption, but this is only the title and then you never mention this again. The methods states how multimorbidity is adressed, but nothing on care consumption. I advocate a change in title.

* In the abstract it only mentions longitudinal, but apart from that I think you should state the kind of study - RCT, cohort or other applicable.

* Where is the study conducted? This may introduce bias whether it is done in a big city or in a rural area or maybe both which is not all mentioned in limitations/discussion/method

* As well known, when using highly selected samples the estimates tend to get inflated in terms of generalizability to the general population and this is not mentioned and I think this need some elaboration from the authors.

* The sentence "Therefore, we aim to investigate factors that are related to HrQoL in older people with multi-morbidity, living at home, and factors that are related to HrQoL" in the abstract seem unfinished, maybe delete the second part.

* In the methods section in both abstract there is nothing about the underlying RCT that is registered. I think the manuscript would benefit from making this clear that this is some secondary analysis made in the framework of a larger project since I as a reader gets a little confused why the registration is in the methods. Further elaborate for clarity.

* Page 5 row 23 I think there is a missing "this" between "and" and "negative", alternatively put a "which" in there.
I have a hard time to understand how the participants where selected, where they consecutively added if they were eligible or how this selection process work? Please clarify.

Consider revising the abbreviations so late in the manuscript and spell them out first time they are written, I find that increasing readability.

Multi-morbidity and multimorbidity are both used. Choose one and use it consequently. My preference would be multimorbidity.

In the conclusion the authors state "In order to facilitate better delivery of appropriate health care to this group, symptom burden, activities of daily living and depression should be assessed by health care professionals. Depression and changes in symptom burden over time should be assessed in order to prevent a decline in HRQoL."

This might be a overinterpretation that simply measuring this would prevent a decline in HRQoL and in my view I think the conclusion might benefit from rephrasing.

Might be referred to reviewers shortcomings in the English language, but I find the meaning hard to understand and I think it needs clarification "Next to inclusion of older people in research, it is important to look at this group living at home, considering the shift from residential to home-based care as a potentially more effective and financially sustainable approach to meeting the health…"

In the aim the authors state "… in this population…” Please write the population so you can read the aim as a "stand-alone”.

The authors mention a lot of RCT:s in the introduction, but this is not such a study ( or?) try putting studies on other types of studies in the introduction for a wider understanding of the knowledge gap.

First time Mets are mentioned the reader have not got a chance of knowing what it is and it needs some clarification.

The sample has a relatively high mean age and a reasonable assumption is that a fair proportion of participants suffer from some cognitive decline or even dementia. This is known to decrease HRQoL and since you have the MMSE-examination it would be good to include this measure into a regression model to explore this. Also if one lives alone heavily decreases HRQoL and the analyses would greatly benefit from including this, if, of course, the data is obtained within the project.

"daily living and more depressive symptoms explained 64% of negative changes in HRQoL (Table 3)." It is, as you write elsewhere, the variability that is explained, please rephrase.

In pp12 and 13 please use only P instead of p Value=xx.
"Taking these variables out of the regression analyses, a negative change in symptom burden (experiencing higher symptoms burden) at 2 years compared to baseline, and higher experience of depressive symptoms at baseline, explained 28% of a decrease in HrQoL at 2 years compared to baseline (Table 5)." I think this sentence would benefit from becoming two, as reader I have a hard time to follow temporal and symptoms change at the same time.

Make a paragraph on its own for limitations (if possible for the publishers) for increased clarity.

The first three sentences in my view are repetitions of result and not conclusions. Consider revising.

In funding p15 row 3 I think there has snuck in a "y" too much.

In Table 1 please put the values outside the brackets and the % in the legend as you done for the actual values.

In table 1, smoking is included, but never mentioned at all in the introduction, results or discussion and if it is a significant contributor it can be included, but since never mentioned I think the ms does not increase in quality due to it why my recommendation would be to omit this or properly introduce it and make use of it.

In table 2 there is a legend telling the reader how the scale is used in terms of higher numbers. This is not necessary with a correlation matrix and my suggestion would be to remove.

In table 4 there is no information on which gender is reference in the model and the change in depression is hard to know whether it is a good change or bad. Please give this information in legend.

Table 4 and 5 would benefit greatly from further information in the heading if the models have controlled for any confounders (for example, sex, living alone et.c). The table shold be able to be read as stand alone.

"Multiple regression models were built by entering those variables that had were statistical significance with a p < 0.05 in the correlation and retaining variables in the final regression with a significant level of p < 0.05."

-> Stated in methods, but where are those variables when reporting? I think you should either, report all variables in the table, or state which one did not make it to the models instead of stating the above.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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