Reviewer's report

Title: The effect of a Gerontology Nurse Specialist for high needs older people in the community on healthcare utilisation: A controlled before-after study

Version: 1  Date: 28 Oct 2017

Reviewer: Sascha Köpke

Reviewer's report:

The authors present a controlled study on the effects of a specialised gerontological nurse care programme including screening/assessments on hospital (re-)admissions of community-dwelling elderly.

The paper is well written and easy to comprehend and the topic surely relevant.

There are a few important aspects that should be addressed for a possible resubmission.

- Most importantly, reporting (although based on CONSORT) is not sufficient. To be of relevance for readers, especially within other healthcare systems, the intervention and the control intervention must be described in much more detail. Therefore the authors should use appropriate reporting guidelines as e.g. the TIDieR guidance (Hoffmann et al. 2014). Also checklists on complex interventions as e.g. CReDeCI2 (Möhler et al. 2015) may be helpful.

- "Quasi-randomised" is a quite unspecific expression and I suggest to refer to "controlled before-after study".

- Please provide information on sample size determination. In the CONSORT checklist you state that this can be found on page 5/6 which is not the case as this information is merely on how the sample was recruited.

- There are definitely more than "two limitations". Therefore, this section should be expanded. First there is the lack of randomization for which you should give a reason as this could have easily been done. Also, you should mention the lack of a process evaluation and of patient-reported outcomes as e.g. quality of life. The fact that the study had not been registered prospectively should also be mentioned. It is a major limitation that "time constraints" led to assessing only a selection of potential participants. Please make clear that (and why) this did not lead to a selection bias.
The conclusions must be expressed more carefully. As the intervention did not prove to be superior to usual care, there surely is no way to claim that the intervention "may be supporting older people to remain at home". It should be clearly stated that the intervention was not effective and that the proper study design to assess effectiveness of such an intervention is a RCT.

Apart from these major issues, there are a number of further concerns (following the outline of the manuscript):

- P.5: There is no need to list the outcomes at the end of the introduction as this is done later anyway.

- P.5: Please report the study period here (which is only mentioned later).

- P.5: Give more information about what is (urban) primary healthcare in the local context (see above).

- P.6: How do people usually get "enrolled in one of the primary healthcare practices"?

- P.6: Please give more information about the recruitment process e.g. who posted the screen, which might be of importance to assess the response rate.

- P.8: The study has been performed 5-7 years ago, so please discuss the reason for this as well as the up-to-dateness of the results.

- P.8: Please give more information about the recruitment of control group participants.

- P.8: Please discuss the validity of routine hospital data used as outcomes.

- P.9ff: Please be more cautious in reporting and discussing "statistical significance". There are many results and as you did not adjust for multiple testing and in the absence of a formal power calculation, significant results are most likely chance findings. Please be more cautious in reporting e.g. "higher mortality" (P.12).
- Table 3: Please give results for total and mean numbers in one row (e.g. 344 (0.39) etc.). For readmission, please give number and % of people with readmission (i.e. % of the whole sample) and then how many of these had >2 readmissions. It would be more informative to see the number of "participants with at least one hospital admission" in addition to the number of admissions.

- P.13: As stated above, please discuss results with more caution as findings were hardly "intriguing" and differences mostly based on chance or bias.

- P.15: The passage on the "systematic review" is already stated on p.14.

- P.15: The last sentence of the second paragraph is incomplete and contains a typo ("hosptialisation").

- P.15/16: References [25] & [26] have been confused.

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?
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
Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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