Reviewer’s report

Title: Impact of training and structured medication review on medication appropriateness and patient-related outcomes in nursing homes: results from the interventional study InTherAKT

Version: 1 Date: 08 Feb 2019

Reviewer: Anne Spinewine

Reviewer's report:

The authors have addressed most comments adequately. The length of the text (and tables) has somewhat increased, and there may have been missed opportunities to condense the information presented. If needed, it seems possible to cut down some of the information presented. For example in table 4, you could provide only data from the 83 (or 81) sample, and skip the distinction between the groups with MAI sum above or below 24; a summary of the information not presented in the table can be provided in one sentence.

Coming back to MAI ratings (primary outcome measure)

- I am surprised that the "drug-disease" interaction rates so low. In older people, it very frequent and much more common than for DDIs to have a clinically significant drug-disease interaction; eg a patient with a fall and taking a BZD. Can you please comment?

- Unless this has changed, the instructions of the MAI mention that when the rating on "indication" is inappropriate, then the rating for criteria 2, 3, 4, 5, 9 and 10 must also be inappropriate. Why was this not applied in the current study?

- The fact that the pharmacist evaluating at t0 is not the same pharmacist who evaluated at t1-2 remains a problem.it is good that a limitation on this aspect has been added, however the authors should have checked IRR on a subsample of patients (eg minimum 10-15 patients). In line with this, the observation that criterion "indication" significantly improved over time, but that there was no significant modification in the number of drugs taken raises question. The first hypothesis is that indication really improved, and that overused medications were deprescribed, but that this was counterbalanced by adding underused medications. The second hypothesis is that the significant difference in indication ratings over time comes from differences in the number of medications prescribed at t0, t1 and t2; and at deprescribing and new prescribing events. Could the authors consider this option? We really miss a table describing ATC classes (ATC level
3, or minimum level 2) mainly used at different time points here (sorry for not mentioning this at the first review); this would be most helpful, and would help to better understand what happened.

**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.

No

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

Yes

**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.

Not relevant to this manuscript

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