Author's response to reviews

Title: The development of a multidisciplinary fall risk evaluation tool for demented nursing home patients in the Netherlands

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Author's response to reviews: see over
Reactions to the comments of the reviewers

Dear Editor,

Hereby we like to give our reaction to the comments of the reviewers on our manuscript entitled “The development of a multidisciplinary fall risk evaluation tool for demented nursing home patients in the Netherlands”.

We want to thank the reviewers for their comments. In our opinion, the adjustments we made based on the comments of the reviewers, have improved the paper.

General reaction
The main comment of the four reviewers is that it remained somewhat unclear in the paper whether our fall risk assessment must be used either as a tool to detect patients at risk for falls, or as a tool to help nursing home staff to tailor fall preventive interventions to the specific needs of each individual patient.

We therefore think it is necessary to further clarify this topic:

The practical aim of our fall risk assessment tool is to help nursing home staff to tailor fall preventive interventions to the specific needs of the demented patients. This is important, because although all demented patients can be considered to be at high risk for falls, this does not mean that all patients should receive the same preventive interventions. In order to intervene in an efficient way one has to evaluate the individual risk profile of each patient and to take preventive measures aimed at managing and/or reducing these specific risk factors.

In order to clarify this topic we made the following adjustments to the text:

- We changed “fall risk assessment” in “fall risk evaluation tool” (in the whole text including the title)

- We replaced the Background of the Abstract by the following text:
  “Demented nursing home patients are at high risk for falls. Falls and associated injuries can have a considerable influence on the autonomy and quality of life of patients. The prevention of falls among demented patients is therefore an important issue. In order to intervene in an efficient way in this group of patients, it is important to systematically evaluate the fall risk profile of each individual patient so that for each patient tailor-made preventive measures can be taken. Therefore, the objective of the present study is to develop a feasible and evidence based multidisciplinary fall risk evaluation tool to be used for tailoring preventive interventions to the needs of individual demented patients.”

- We replaced the last part of the Background of the main text (“When aiming…could be based”) by the following text: “In order to intervene in an efficient way in the group of demented patients (who all can be considered to be at high risk for falls), it is important to systematically evaluate the fall risk profile of each individual patient so that for each patient tailor-made preventive measures can be taken. Therefore, the objective of the study presented in this article is to develop a feasible and evidence based multidisciplinary fall risk evaluation tool to be used for tailoring preventive interventions to the needs of individual demented patients.”

Specific reactions

Reactions to Helen Myers

- The points 1 to 8 have been incorporated in the text.
- Point 9: As mentioned above we changed “fall risk assessment” into “fall risk evaluation tool” in the whole text, including the title.
• Point 10: We agree with Meyer that further research into the effectiveness and feasibility of this tool is desirable. We like to indicate that the feasibility of the tool has been tested in a pilot study, and that the feasibility of this tool, and the effectiveness of the preventive interventions targeted by this tool, is currently being evaluated in a randomised controlled trial among demented nursing home patients in the Netherlands [58] (see also the last two sentences of the Discussion).

Reactions to Ngaire Kerse
• Comment of reviewer: “The authors should outline how the new tool is planned to be used.”
  In order to clarify this issue (besides the revisions discussed under “General comments”) we added the following subparagraph at the end of our Results section:
  “Tailoring interventions based on the fall risk evaluation
  Based on the results of the fall risk evaluation the nursing home staff using the tool has to decide what specific fall preventive interventions are needed for each individual patient.”

• Comment of reviewer: “A comment on other tools that have been used for people with dementia would increase the usefulness of the paper”. We agree that such a comment would be very useful, however according to our knowledge tools specifically developed for evaluating fall risk among nursing home patients in order to tailor interventions to the fall risk profile of the patient, are not available yet. And although the approach of Haines is certainly interesting it is in our opinion not comparable with our tool, because it is not specifically aimed at demented patients in nursing homes.

Reactions to Robert A. Ruchinkas
• Comment of reviewer: “The main concern with this paper is the fact that it focuses more on the process of determining potential fall risk factors in this population in stead of the actual science behind these predictors.”
  In our opinion a detailed description of the science behind the risk factors is beyond the scope of our paper and would make the paper too long. However when the reader is interested in details about the science behind the predictors he can read the original papers to which we refer in table 1. In addition column 6 in table 2 shows the factors that have an OR or RR of 1.5 or higher which is a rather good indication for the predictive strength of the factor.

• Comment of reviewer: “Much more need to be said about what exactly is the ‘correct choice and use’ of assistive and protective devices ad how to measure it?”
  We added the following text at the beginning of Assistive and protective devices:
  Taking into account the physical abilities and mental status of the patients involved, the evaluation of both correct choice and use of assistive (walking aids, transfer aids) and protective (external hipprotector, alarmcushions/sensors) devices, can be performed by the clinical judgment of nurses, physiotherapists and occupational therapists.

• Comment of the reviewer: “More needs to be said about the correct definition of a fall and limitations of patients self-report of falls.”
  We changed the text of the Previous falls subparagraph:
  “A fall is defined as an event which results in a person coming to rest inadvertently on the ground or other level (adjusted version of the definition of the Kellog International Work Group). At admission to the nursing home, information with regard to the fall history in the previous 6 months has to be gathered from the general practitioner, family members and if possible from the patients themselves. Because information about the fall history is gathered retrospectively it is important to use more than one source of information, whenever possible. Obviously the self-report of falls among demented persons may be
very unreliable due to their cognitive problems. The information that has to be gathered includes the number of fall accidents, the possible causes and circumstances of the fall, the consequences of the fall, and the preventive actions already taken.”

- Comment of the reviewer: “Why not placing all those with a diagnosis of dementia in a fall prevention programme?”
  We fully agree with the reviewer. As mentioned under the general reaction we regard all demented patient to be at high risk for falls. So preventive measures should be taken for every patient. However, we think that it is important to tailor these interventions to the specific risk profile of each patient. For this reason our fall risk evaluation tool is developed. As pointed out earlier, we made some revisions in the text to clarify this topic.

- As suggested we changed the word “hart” into “heart” in table 1.

Reactions to Sirkka-Liisa Kivelä

- Comment of the reviewer: “No trials to assess the usability of the instrument in practical work were performed.”
  Currently a trial to test the effectiveness and feasibility of the fall risk evaluation tool is being performed. We added the following text to the Discussion section:
  “Currently we are performing a randomised controlled trial among demented nursing home patients in the Netherlands in which we are testing the effectiveness of the fall risk evaluation tool and the multifactorial interventions specifically targeted by this tool [58]. The trial is accompanied by an evaluation of the feasibility and acceptability of the fall risk evaluation tool, in order to further optimise it and to make it most suitable for use in daily practice.”

- Comment of the reviewer: “The sensitivity and specificity of the instrument in detecting the demented falling is not studied.”
  We consider all demented patients to be at high risk for falls. Our tool is used for tailoring interventions to the risk profile of the patient and not for selecting those patients at risk. Therefore this article does not go into specificity and sensitivity of the tool.

We hope you will find the revised manuscript acceptable for publication in *BMC: Public Health*.

Yours sincerely,

Jolanda van Haastregt