Reviewer's report

Title: Natural course of care dependency in residents of long-term care facilities: Prospective follow-up study

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Reviewer: martin smallbrugge

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The article provides additional evidence on the changes in care dependency in LTCF-residents and on the relationship between care dependency and mortality in this population.

Major Compulsory Revisions

1. In the abstract, the background, the result and the discussion sections (and maybe also in the title) more specific attention should be paid to the relationship between care dependency and mortality as this is also an important part of the article (see figure 1 and table 2).

2. The study-population (in and exclusion criteria) should be more detailed: the JAGS article (ref 13) is not available yet, and for assessing the external validity of the study this is essential as inclusion/exclusion criteria for the cranberry trial may result in a specific subpopulation of the LTCF-residents.

Minor Essential Revisions

1. In the method section information about how care dependency is measured is separated from the information about how it is categorized. This categorization information is provided in the first sentences of the paragraph about Statistical Analysis. I would be prefer to receive this information under Care Dependency and a more extensive motivation for the chosen categorization, as there are more ways to investigate care dependency changes (for example choosing a change of more than half of the standard deviation of the mean as a clinically relevant change)

2. In table 3 the variability in care dependency is shown for two periods (0-6 months; 7-12 months). The number of residents in both periods are the same (564). In my opinion in the first 6 months more residents should and could be included: residents who died in the second period can be included in the first period for this analysis.

3. Table 4: I have some questions about this table/the analyses done for this table:

Why is this analysis not carried out for the 12 month period?

Based on which criteria were the variables myocardial infarction, stroke, diabetes mellitus, COPD and urinary tract infection preceding year excluded from the adjusted model (P value not significant in the crude model? If yes, why then
include the first three variables in the adjusted model?)
Was collinearity between independent variables like dementia, urine incontinence and baseline CDS score investigated?
4. In the conclusions the relationship between care dependency and mortality could be mentioned as an important finding of this study.

Discretionary Revisions

1. In the discussion it is stated: ‘Despite the selected single center study of Dijkstra et al., they found that the degree of care dependency at entry to the study was one of the strongest predictors of follow-up CDS ratings [12].’ Maybe the English is not correct in this sentence. I suppose that the authors state here that ‘in this selected single center study the degree of care dependency at entry to the study was one of the strongest predictors of follow-up CDS ratings’?
2. The strength and limitations is somewhat lengthy now and includes some information that could be removed:
   - the information about the intramural care settings (‘intramural care settings in which care for the most vulnerable older persons is provided by a multidisciplinary team including elderly-care physicians, nursing assistants, licensed practical nurses, registered nurses and paramedical professionals.’): this information could be provided in the methods sections.
   - the sentence ‘On the other hand, they are not automatically generalizable to vulnerable older persons living at home or in residential homes; in these latter populations we expect differences in care dependency status, comorbidity and functioning in ADL.’ Can be removed maybe, as it is no real strength or limitation

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests