Reviewer’s report

Title: Predictors of activity involvement in long-term dementia care homes: a cross sectional study

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Reviewer: Katherine Berg

Reviewer's report:

This study is based on an extensive survey of long term care settings focused on persons with dementia. The authors have done a rather extensive literature review of predictors of activity. The authors state that they will provide more "solid" answers but do not specify why their results will be more "solid"

The methods section describes measures and variables available to approximate the predictors of activity identified by the literature review. This is a rather dense section and may best be complemented by more information in a table.

A possible alternative is to present the results of the literature review in an appendix and make Table 1 a summary table of key findings from the literature review - accompanied by specific operational definitions of corresponding variables available in the survey. This may also be the place that shows the changes they made to existing scales eg dropping items. Specific information is important for anyone attempting to replicate the study or analyses.

Please correct the abstract that says 20 items were used to define activity whereas the methods state that 3 were disregarded, leaving 17 items.

Little information is collected on the training received by nursing staff to complete the assessments. Were nursing staff familiar with the MDS assessments? the Katz ADL Scale? Did they receive additional training to administer the Cognitive Performance Scale or the Neuropsychiatric Inventory?
It is stated in several places that they included all residents in a facility in the proportion. For example, was the percentage of persons with physical restraints based only on those in dementia units or all persons in the facility, regardless of diagnosis or special unit? Please clarify for each variable.

Who collected data on use of physical restraints in the total facility?

Were staff randomly chosen from units caring for persons with dementia or from throughout larger facilities?

Why look at prescribed medications vs administered medications? In some cases, "as needed" medication may be prescribed but rarely administered.

Table 4 shows the characteristics of participants. It would have been interesting to see this table across the 5 types of settings caring for persons with dementia to show whether similar patients are seen in the different settings.

For most variables the choice of mean (sd) does not provide much information. For example, CPS scores are usually grouped in levels- showing the percentage in each category. Although the range of possible scores is 0-6, I would be surprised to see participants in this survey to have scores of zero on the CPS.

Similarly consider grouping Katz scores either by level or early vs mid- vs late-loss ADLs. Was mobility assessed? It seems intuitive that residents who are more mobile are more likely to be involved in activities.
The NPI items, in addition to the total score, would be informative given that behaviors were identified in the literature review as predictors.

For analyses, CPS scores and Katz scores are generally not used as continuous variables but rather dummy variables are created based on categories.

In summary, this study has provided quite a broad range of person level and organizational variables to examine predictors of activity in persons with dementia. There is a need to clarify the operational definitions and methods used for data collection and analysis.

**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.

Yes

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

Unable to assess

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