Reviewer’s report

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

Version: 1 Date: 01 May 2017

Reviewer: Katherine Berg

Reviewer's report:

the manuscript is improved with the revisions although there are a few essential recommendations for revision.

The finding that cognitive level is associated with involvement in meaningful activities is not unexpected. The authors have pointed out that this is consistent with the literature. Given their interest in exploring factors related to involvement, it is important for them to consider level of cognitive impairment in strata of CPS score rather than handling cognitive status scores as a continuous variable. At the very least they should create dummy variables to represent mild/mod, mod severe and very severe stages of dementia akin to the levels presented in the descriptive table. if there are differences in the relationships across levels of CPS scores, it may also be advisable to perform separate logistic regressions by level of CPS scores. this information will be very valuable to care homes ability to plan for individualized care.

In the descriptive table, they may wish to re-consider how they present the range of scores and whether or not the mean (sd) is meaningful. the range could be included with the description the scale rather than a separate column which then includes alot of "dots". in many cases, the mean (sd) are not informative. n and % would better describe the distribution. there may be other alternative structures to the table that do not include at the "dots" which are somewhat distracting.

Although the range of potential scores for the CPS is 0-6, surely no one in a dementia unit has a score of zero or maybe even 1? Please adjust the table to reflect the actual scores for the levels of CPS.
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.

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.

I am able to assess the statistics

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

Needs some language corrections before being published

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