Reviewer’s report

Title: Effects of Depression, Dementia and Delirium on Activities of Daily Living in Elderly Patients after Discharge

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Reviewer: Cathy Gong

Reviewer's report:

Summary:

This study uses 149 patients aged 65 and over admitted to the geriatric ward in Taiwan to explore the impact of the three geriatric conditions (depression, dementia and delirium) (3D's) at the index hospitalization on activities of daily living (ADLs) during and after hospitalization.

Geriatric Depression Scale Short Form, Mini-Mental State and Confusion Assessment Method were used to identify patients with depression, dementia and delirium on admission, respectively. Barthel Index (BI) was used to evaluate patients' functional status on admission, at discharge, 30-day, 90-day and 180-day after discharge. Generalized Estimating Equation was used to calculate the associations between 3 D's and BI.

It is concluded that depression does not affect patients' ADLs. On the other hand, dementia and delirium can persistently limit patients' physical function. Future care should focus more on dementia and delirium to restore function.

Comments:

This is a well written original research article, addressing an important issue for older people with geriatric conditions in hospitalization. However, the sample size is small (27, 37 and 85, respectively ) , which might have impact on the robustness of the results, especially for those with depression. This limitation has been discussed in this paper.

Things to be improved:

(1) It is mentioned in the abstract that "One-hundred-and-forty-nine patients were included in this study. Twenty-seven patients (18.1%) had depression, 37 (24.8%) had dementia, and 85 (57.0%) had delirium. Were the three geriatric conditions (depression, dementia and delirium) (3D's) only measured at the index hospitalization?

(2) In Table 3, have the other variables been controlled in the model? Age, gender and social economic status? Can the authors provide the estimations of full model as appendix?
(3) For Table 3, could the authors also run the model on the changes of BI over time by including depression, dementia and delirium all together into one model? This can catch up the impact of co-morbidity of the three geriatric conditions.

**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:

Acceptable

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