Reviewer's report

Title: Vitamin B6 deficiency and diseases in elderly - a study in nursing homes

Version: 3 Date: 17 September 2012

Reviewer: Jessica Sautter

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Major compulsory revisions
1. The “study design and sample” and “study population” sections need more detail for readers who are not familiar with the original study. To better describe sample selection, refer directly to Figure 1. Be more clear about how self-reported outcomes were generated – did the nurse ask the respondent, or did the nurse answer for the respondent based on familiarity and records? How did data collection differ for respondents with cognitive impairment? What are the implications of excluding residents with organic GI diseases?

2. In the last paragraph of the “discussion” section, the authors should comment on the difference between this study’s findings and previous literature. They do a good job of examining causes for differences between residents with GI and a general nursing home population, but there is no discussion of why the current study contradicts several previous studies demonstrating associations between B6 deficiency and several other diseases (“background” section paragraph 2, references 7-12). Do the authors believe that the difference is due to small sample size, or are there other possible explanations?

Minor essential revisions
1. The entire manuscript needs to be edited. The major problem is run-on sentences. The authors should work on writing shorter and clearer sentences so that the reader can understand the main points more easily.

Discretionary revisions
1. The “background” section would benefit from some justification of what this study adds to the current literature on B6 deficiency. The study has clear, descriptive research aims, but is not very innovative.

2. In the “statistics” section, the authors should not consider correlations with p-values greater than 0.05 as trends. The large number of statistical tests increases the likelihood of Type I errors. The low sample size inspires even less confidence in trends that are not significant.

3. Table 1 is not labeled well. What do the numbers in the table mean? I suggest that the authors drop this table and include any necessary information in the text.

4. The last sentence in the “Vitamin B6 deficiency and diseases” section to be shortened to note that there were no significant correlations between B6
deficiency and GI symptoms without displaying non-significant estimates and odds ratios.

5. The title is slightly misleading because it mentions diseases but no significant associations were discovered between B6 deficiency and diseases. I suggest deleting mention of diseases.

**Level of interest:** An article whose findings are important to those with closely related research interests

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

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.