Reviewer’s report

Title: Does diagnosed comorbidity differ between elderly patients with and without dementia? Results from an analysis based on German insurance claims data.

Version: 1  
Date: 25 October 2013

Reviewer: Daniel C Malone

Reviewer’s report:

Major compulsory revisions: none

Minor essential revisions: See below

Overall summary

This paper uses an insurance database to determine if persons with dementia have a greater prevalence of mostly chronic conditions as compared to a gender matched cohort of persons 65 years of age or older. The rationale for this paper is somewhat non-compelling. The methods used by the authors are generally acceptable, except for the selection of the Type I error rate. This study has many thousands of patients and therefore, even trivial differences between the two groups will be statistically significant. Examining the results bears this out, where 3% differences in prevalence of conditions is highly significant. Furthermore, multiple tests are conducted on the same data – thus increasingly the likelihood of spurious findings. The authors should consider revising the Type 1 error rate or (best option) – taking a random sample of matched pairs from both groups to generate a smaller number of observations on which to base the analysis.

The writing could be improved by using more precise terms throughout the paper. I will let the editor and/or copyright editors make those changes if accepted. The authors might consider employing a colleague with native English skills to edit the paper.

Specific comments

Introduction:

What is meant by the statement: “what extent do discrepancies in health care provision contribute?”

Methods:

What is the purpose of creating “dementia quarters”? Does quarter refer to a time period – such as a quarter of a year (it appears this is the case), or something else? This terminology (“dementia quarters”) is unconventional and it is recommended to be stricken from the paper.
What age matched on nearest year? Please be more specific.

Don’t report matching results in the methods. This belongs in the results section.

The authors should provide references for the “other studies” mentioned in this sentence regarding identification of chronic conditions. “The choice of the 30 final diagnosis groups was on account of their prevalence, their frequent mention in other studies”

Results

Every statement in the results that infers the groups are similar or alike should have the result from a statistical test also reported. For example, the authors state in the 1st paragraph of the results that the case group had a “slightly higher” value of the Charlson score than controls. What does slightly higher mean? Is this difference statistically significant? Avoid terms such as “slightly” – either it is or it isn’t higher.

The authors should state the results represent the “prevalence of comorbid conditions.” The study only examines the prevalence on condition, not the incidence. This should be made more explicit in the reporting of the study results.

Discussion

The authors do a very nice job with discussing the findings of the study with respect to the possible explanations based on previous studies and underlying pathophysiology.

Tables

Table 1 needs to contain p-values. Are there significant differences between the groups with respect to age, environment, care level?

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

**Declaration of competing interests:**

I have no competing of interest with this paper.