Reviewer’s report

Title: Physical and mental health comorbidity is common in people with multiple sclerosis: nationally representative cross-sectional population database analysis

Version: 1 Date: 13 April 2014

Reviewer: Christian Fynbo Christiansen

Reviewer’s report:

This cross-sectional study examined the prevalence of physical and mental diseases in 3,826 patients with multiple sclerosis (MS) from a cohort of more than 1.2 million people in the general population.

The paper is well written and it addresses an important research question. The main limitation is the cross-sectional design, limiting the ability to distinguish pre-existing comorbidity from complications occurring after MS is diagnosed.

Major Compulsory Revisions
- Please mention study period in the methods section.
- The finding of a lower prevalence of cardiovascular disease is surprising. Could the study design contribute to such a finding? E.g., by not including MS patients who died from cardiovascular events before inclusion in this cross-sectional analysis.
- How many years back was chronic diseases captured? Would it be possible to distinguish comorbidity present at MS diagnosis from complications occurring after MS is diagnosed? Otherwise, this limitation should be discussed.
- It may be worth discussing the potential impact of surveillance bias from MS patients being more likely to be diagnosed with other chronic illnesses due to frequent contacts with the GP and other health care professionals.
- The study relies on Read codes and validity of these to identify MS and the other chronic conditions could be discussed. Data from the GRPD/CPRD showed reasonable positive predictive values for most conditions, but only 62%-64% for MS (Khan et al., BJGP 2010).

Discretionary Revisions
- The introduction section is brief and clear, but the discussion section include several excellent phrases describing the importance of knowledge on comorbidity in patients with MS that may be worth including in the introduction section instead (e.g., page 8 first paragraph).
- Statistical testing adds no information to the odds ratio. Please consider omitting p-values from tables. (Rothman KJ., J Gen Intern Med. 2014)

Minor Essential Revisions
- p. 3: “Elixehauser” should be “Elixhauser”
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

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