Reviewer's report

**Title:** Symptom load and functional ability: Results from the Ullensaker Population Study

**Version:** 1    **Date:** 10 September 2012

**Reviewer:** Jan D Reinhardt

**Reviewer's report:**

**General comments:**

The article treats an interesting research question in that it examines the association between numbers of patient reported symptoms and their functional ability. It is overall well written and readable.

I particularly have methodological comments.

**Major compulsory revisions:**

On page 7 and in table 2 it says that the explained variance was increased when the symptoms were entered separately (as dichotomous variables???). However this may be an statistical artefact due to overfitting of the model (e.g. Bayak 2004) an aspect which should be at least discussed. Also, measures of fit adjusting for the numbers of variables such as the Baeysonian Information Criterion (BIC) are available.

Also, in such models multiple collinearity is likely so that the contribution of individual parameters cannot be appropriately appraised. This aspect should at least be discussed as well and a measure of multi-collinearity such as VIF may be provided.

Moreover, it is unclear if the multiple correlation coefficient is just the usual determination coefficient (= explained variance through all variables in the model) or the multiple coefficient of determination which is not so well known. Please explain.

**Minor essential revisions**

I often got confused because throughout the paper different terms are used for the same issue, i.e. pain symptoms, musculoskeletal symptoms, symptoms, muscular symptoms, number of pain sites (NPS) seem to be used synonymous, i would suggest to just use one term and if an acronym is introduced to then consequently use this acronym.

On page 4 in the las paragraph, it says "regressions on non-muscular symptoms and NN-MS" which I thought were the same. For clarity, please also write regressions of functional ability/COOP-WONCA on ...
P 6: Please provide the mean age, standard deviation, and age range of the sample in paragraph 1.

P 6/table 2: It is not surprising that NPS has a higher beta than NN-MS since they are differently scaled with NPS having a smaller range. Please include standardized coefficients.

Discretionary Revisions

Though not the main focus of the study it could make sense to adjust for socio-economic variables in a separate model. I would expect that the contribution of number of symptoms could then decrease. As reported symptom number and SES may both be correlated with functional ability.

Table 1 is difficult to read and a graphical depiction, e.g. as bar chart with collapsed categories may be an idea.

**Level of interest:** An article of importance in its field

**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 declare that I have no competing interests