Reviewer’s report

Title: Distinctive subgroups derived by cluster analysis based on pain and psychological symptoms in Swedish older adults with chronic pain - a population study (PainS65+)

Version: 1 Date: 14 Jul 2017

Reviewer: Victoria Strauss

Reviewer's report:

Thanks for all the responses. Two minor suggestions.

1. I appreciate that the authors’ attempt to use the right statistical term. however, there are still some errors in the manuscript, as follow. The regression analysis works differently from logistic regression and also from multinomial logistic regression, therefore, they should not be mixed up.

P2, abstract, Results: the logistic regression....

P10, line 229, we did not control for covariates in the regression analysis.

P13 line 311- the regression analysis revealed that....

P16 line 382, the regression analysis revealed that ..

2. Can the authors add the word of bivariate in the (p9-p10 line 220-221) multinomial logistical regression analysis--p9-p10, line 220 -221, When significant differences were found (p<=0.05), we performed "bivariate" multinomial logistic regression analysis and include the word of bivariate in the title of Table 4 -Table 4. "Bivariate" Multinomial logistic regression.

This request is to make it clear that the analysis has not controlled for any other variables presented in the same table.

3. P15 line 364- can the authors replace the word of risk with odds as they are not comparing the risk that would be indicated by relative risk, but rather odds as indicated by odds ratio in the multinomial logistic regression in SPSS.

4. P16, line 366-367, can the authors reword the sentence of "interestingly, for Subgroups 1 and 2 we found a reduction of quality of life by almost 100%...."? They should not interpret Odds ratio like interpreting the relative risk reduction. In addition, I agreed with their interpretation that compared to Subgroup 4, the subgroups 1 & 2 had much smaller odds of
EQ-5D index scores, but the difference in quality of life measure of EQ5D VAS between subgroups is not large. Therefore, I would argue that they cannot say that patients in subgroup 1 & 2 had odds of having extremely lower quality of life when compared to those in Subgroup 4 in general.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**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

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