Reviewer’s report

Title: Stress levels predict substantial improvement in pain intensity after 10 to 12 years in women with fibromyalgia and chronic widespread pain. A cohort study.

Version: 1 Date: 15 Mar 2019

Reviewer: Marcus Beasley

Reviewer's report:

All of my minor comments and suggestions have been addressed very well, thank you.

I still have reservations about the two main problems mentioned in my original comments, regression to the mean, and measuring predictors that are associated with pain intensity at baseline. I think this is important because it would be wrong to give advice to patients based on statistical artefacts.

Unfortunately I'm not too sure how using a percentage reduction in pain (rather than a cut-off value) is affected by these two problems (this is my ignorance). When percentage reduction in pain is used in a trial, then statistical artefacts appear in both the intervention and control groups equally, but this is an observational cohort.

So, could I ask for two more things:

- You have provided a reference for the recommended use of percentage reduction in pain in clinical trials - could you also please provide a reference that demonstrates its suitability for non-trial situations.

- You have consulted a statistician who said that having predictors associated with pain intensity at baseline is not a problem because you have used a relative measure of improvement rather than a cut-off - could you please provide a reference for this.

Just a few minor comments and suggestions:

- In the Abstract, page 2, line 16, mean change for pain distribution is -2.0 with no units of measurement. You could write this as '-2.0 sites' or '-2.0 regions', perhaps
In the limitations section of the Discussion, you say that improvement is unlikely to be due to regression to the mean since you ask about pain in the last month. This does not convince me that this is not regression. Instead you could mention something about how the patients were recruited to the cohort.

In line 13 of page 11, the association of baseline stress with a reduction in pain intensity in the multivariable model (OR 0.69, 95%CI 0.53-0.89) is exactly the same as that in the univariable model in Table 4 - is that correct?

Higher pain intensity at baseline predicts substantial improvement in pain intensity 10 to 12 years later. Would you therefore say "the worse a patient's pain is, the more likely they are to get better"? Please comment on this finding in the Discussion.

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.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Unable to assess

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