Reviewer's report

Title: Comorbidities, characteristics and implications in local, regional, and widespread pain - a descriptive population-based survey

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Reviewer: Andrew Kittelson

Reviewer's report:

The descriptive understanding of pain in society is underdeveloped and would benefit from epidemiology such as is presented in this report. I think the authors have made some nice improvements on the previous draft of the paper. However, I still think there are some weaknesses in the rationale and approach (described below).

Major Compulsory Revisions

1. The stated purpose of the study—to examine associations between the spreading of pain and various clinical and demographic factors—is not efficiently addressed with the study methodology. Spreading of pain is not directly examined (e.g. number of pain sites, area of bodily pain), but is instead examined in the context of categories (local, regional, widespread) with rather arbitrary boundaries. I wonder about the usefulness of these categories for a few reasons:

   a) Based on the authors’ descriptions, it seems possible for a person in the regional pain category to have a greater number of bodily pain sites than a person in the widespread pain category. Clearly, if this occurs, relevance of the analysis to the study purpose would be in question.

   b) The operational definitions of pain categories result in the vast majority of participants with pain being categorized in the “regional pain” group. So the population is divided into the mildest ~12-15% (Local Pain), the most severe ~8% (Widespread), and an apparently intermediate group (Regional) constituting ~80% of participants with pain. Group differences may be magnified by the comparison of primarily the very least and very most involved participants. The potential influence of confounders also seems increased under these conditions—for example, pain related to cancer or systemic disease (as opposed to more isolated changes in pain physiology) would seem to me to be much more likely to occur in a group of participants with the very most widespread pain.

   c) In the discussion, the authors acknowledge: “In future studies, it would be interesting to split the broad group of regional pain into subgroups of increasing spreading. If the results still hold and show clear differences between all the pain groups, this would strengthen our hypothesis of a close to continuous characteristic of pain described by increased spreading.” Such an analysis does
not have to be relegated to “future” work but could in fact be performed with the information available in this dataset and would seem to inform the stated purpose of this study.

2. The introduction still lacks focus, and conflation of pain severity with number of pain sites and chronicity of pain is still a problem (e.g. page 6, lines 117-118).

3. The analysis involves dozens of pairwise comparisons (apparently without correction for multiple testing) across the 3 pain categories, when some sort of omnibus test would seem more appropriate.

4. As I understand it, transitions between pain categories could in fact reflect test-retest reliability of the pain manikin (e.g. participant continues to have neck pain but neglects to mark it on a retest) and this should probably be stated as a limitation of the study.

5. It’s not clear what is meant by “implications of pain.” “Pain characteristics” is also a little too vague, in my opinion. Frequency, duration, and intensity were assessed, but other “characteristics” (e.g. pain quality) were not assessed.

Minor Essential Revisions

None at this time

Discretionary Revisions

Information regarding additional measures on the second questionnaire (catastrophizing, etc) is probably tangential to the purpose of the manuscript in its current form.

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: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests: 

I declare that I have no competing interests