Author's response to reviews

Title: Effects on pain and disability of education to facilitate knowledge about chronic pain for adults: a systematic review with meta-analysis.

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Version: 3Date: 19 August 2015

Author's response to reviews: see over
Dear Editors

I write in response to your feedback regarding the submission of our review.

We hope the amendments we have made will inform and clarify for the reader and peer review team.

Thank you for your time and consideration.

Dr Louise Geneen, and the author team, Population Health Sciences, University of Dundee

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<th>COMMENTS FROM REVIEWERS</th>
<th>RESPONSE FROM AUTHORS</th>
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<td><strong>EDITORIAL REQUESTS</strong></td>
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<tr>
<td>1) Please make sure you include a conclusion section in your abstract.</td>
<td>Have added a conclusion to the abstract</td>
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<td>2) Please include a list of abbreviations used in the manuscript and their meanings.</td>
<td>Abbreviations added - listed alphabetically before abstract</td>
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<td>3) Please move the tables to after the reference list.</td>
<td>After our reference list is a list of legends for figures, tables, and additional files. All figures, tables, and additional files have been uploaded separately (as they had been previously)</td>
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<td><strong>REVIEWER 1</strong></td>
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<td>Discretionary revision: I struggle with title but am happy to accept. The wording is clumsy and (in my view) does not do justice to the content and quality of this review</td>
<td>Amended title to delete “on pain and disability” to simplify and clarify: “Effects of education to facilitate knowledge about chronic pain for adults: a systematic review with meta-analysis.”</td>
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<td>Minor Essential revision: Limited discussion on bias</td>
<td>Have added detailed assessment of bias under “Results/Risk of Bias in included studies” section</td>
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<td>Discussion and conclusion appropriate</td>
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<td>Discretionary Revision: Comment made by authors Line 409 ‘We did not contact authors for further information and excluded papers that were not available in English. Both of these decisions were made as a result of the resources available to us.’ This is interesting and may not be a barrier to publishing but will be seen as a downside of</td>
<td>Additional sentence added re the foreign language exclusions (only one paper excluded for this reason, and only at the full paper stage as others had been excluded based on title or abstract) – we have also added the reference for this paper for transparency, so the reader can judge relevance and possible contribution to the analysis it had been included.</td>
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completeness of systematic review. This may need a sentence of explanation

We have also added a sentence regarding contacting authors (as we felt we did not need to except in one case): "the need to contact authors only occurred in the case of a single paper where detail was lacking regarding group sample sizes, and no variation around the mean was reported. We decided we were unlikely to receive a response due to the considerable time period since publication (1988), and as a result the paper was excluded from the meta-analyses".

Minor Essential Revision: Lines 418 – 423 needs rewriting. I found the final sentence hard to understand and would suggest rewrite

Have attempted minor re-write for clarity: "Equivalent research examining mode of delivery would be of interest to further examine whether online delivery of an educational intervention, for example, is equally effective across all age groups, or whether it is the group element compared to individual learning that has the greatest influence on effect size."

**REVIEWER 2**

**Introduction**

1. The gap in research is not clearly defined in the introduction. In the discussion, the authors cite 7 previous reviews on the effects of education on chronic pain, 3 of which performed a meta-analysis. What is the gap in research that has been left by these previous reviews that the current review aims to address? What makes this a new question?

The reviews cited in the discussion examined cancer pain (excluded in this review) and specific types of education (PNE) for specific areas of chronic pain (eg neck OR back). We wanted to examine ANY and ALL types of education in ALL sites, not just PNE despite this being the only effective type in the end, and not just localised.

The two reviews that examined general education for chronic pain were education for clinicians and pharmacists, not patients.

2. Although it was a secondary objective and tested post-hoc, some background on testing the effects of education on psychosocial outcomes is needed.

Methods

3. The search was conducted 18 months ago (pg 6, para 1). To ensure the results are up to date, the search should be run again. Evidence from any additional studies would strengthen this review and

The interval since the cut-off date for including papers in the review represents the time required for detailed analysis, reporting and the submission process. It would be impractical, with current
increase the interest level.

resources, to run, analyse and report the review again, without further substantial delay, at which point there would again be a gap between cut-off date and peer review.

4. Papers were excluded if they assessed education in specific conditions, rather than chronic pain in general. 5 of the included studies were on chronic pain/fibromyalgia, but 4 were on chronic low back pain. If the authors consider chronic LBP to be widespread chronic pain this is fine, but it should be specified in the exclusion/inclusion criteria (pg 5, para 2). Also, what is meant by "specific" conditions associated with chronic pain could be better defined. For example, some readers would consider IBS to be non-specific condition.

Our intention was to focus on education specifically about (chronic) pain, rather than about particular diagnoses that include pain as a symptom. This was in order to exclude education initiatives that focused on non-pain symptoms (e.g. bowel dysfunction in irritable bowel syndrome), or on impact that would not be transferrable from one condition to another (e.g. joint stiffness in osteoarthritis). We have revised the text to try to clarify this.

5. Some readers might consider a meta-analysis of 2-4 studies a little premature. What criteria was used to decide whether to perform a meta-analysis or not?

We decided to perform meta-analyses when studies and groups were comparable, and therefore appropriate to combine, even if this meant only two studies were analysed. Using the random-effects model the studies were weighted appropriately. We have also reported level of heterogeneity (I-squared) to ensure appropriateness of the combination.

Results

6. The most interesting forest plots are Figures 2 and 4. The remainder could be in the supplement. Tables 4a and 4b are the most informative and should be visible in the results section.

All figures and tables were uploaded in the order in which they are referred to in the text. We will be happy to accept the editor’s advice on ordering and placing figures.

7. Table 1 would be clearer if there were separate columns for education intervention and comparison intervention.

This was originally attempted, but columns were combined as column width was restricted and made a lot of information illegible. Also we described all arms mentioned in the study, and then identified which would be used in the analysis/review for transparency regarding data available for transparency to the reader.

Discussion

8. The wording is slightly ambiguous in the first paragraph of the discussion (pg 16, line 338). PNE was only effective in the very short term, and only when compared to a different type of education.

Have added in “immediately” to highlight effect timing.
The data appear to better reflect preliminary evidence that PNE is effective immediately after treatment and only when compared to an anatomy/physical activity lesson. This should be the conclusion regarding PNE.

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<td>9. Education appears to only influence short-term outcomes, if anything. The authors do not reflect on why this might be. What is the likely impact of a small, short-term effect on disability in a chronic pain population? Catastrophising changed significantly in PNE but was recently shown to not mediate the effects of pain on disability (Lee et al. Pain. 2015 Jun;156(6):988-9). Factors other than catastrophising might therefore explain the improvement in disability following PNE. Some more discussion on mechanisms behind any potential effect of increased knowledge on pain or disability is needed. For example, the authors suggest that effects of PNE are through reconceptualising hurt vs harm (pg 18 para 2). How exactly might this affect pain or disability?</td>
<td>We were not examining mechanisms in this review, but instead discuss the results in the context of the data available. There are too few relevant studies to inform possible mechanisms. Also, as psychosocial outcomes were examined post-hoc, we do not have the full scope of information available (there are more studies available with these as outcome measures, but we only included those examining pain as an outcome measure). We therefore feel that a detailed discussion about these mechanisms would be beyond the scope of this paper.</td>
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<td>10. Potential for bias in the primary studies needs to be discussed, particularly for those with positive results. Table 3 has ticks in boxes for 6 studies indicating low risk of bias for blinding participants and personnel. It is not possible to blind therapists and is questionable as to whether one can blind participants in an education trial. This warrants interpretation in light of the positive results for PNE.</td>
<td>Risk of bias has now been described in detail in the Results section.</td>
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**Conclusion**

11. For the same reasons as point 5 above, the authors should make the conclusion more specific. There is preliminary evidence that PNE has immediate effects on disability when compared with anatomical/activity management education.

12. There is also a typo on line 435

**Corrected**