Reviewer's report

Title: Osteopathic intervention in chronic non-specific low back pain: a systematic review

Version: 3 Date: 5 February 2013

Reviewer: Mitchell Haas

Reviewer's report:

Major Compulsory Revisions:

1. Inclusion/Exclusion Criteria:
   - The trial with pain as a secondary outcome should not be excluded on that grounds alone.
   - A trial should not be excluded on the basis of quality alone. This was not an exclusion criterion. The absence of information on randomization should do it.
   - Many of the 12 studies reviewed do not meet the inclusion criteria in Figure 1 outright. Studies with mixed acute/chronic populations are not studies of chronic low back pain, so can be excluded outright unless you can get the data from the authors on the chronic patients. Studies without nonspecific low back pain can be excluded outright. The UK BEAM trial was not limited to osteopaths or chronic patients. If randomization is questioned and cannot be confirmed, the study can be excluded on that ground.
   - Tables 1, 2, and 3 can be simplified. Methods – Results of Individual Studies should be revised.

2. Abstract - Results
   - Limit the selection reporting and concentrate on the results in this section. Compare OMT regimens to specific controls for the studies included in the evidence. Mobilization appears here but the physical therapy and exercise do not.
   - The language “no better than” can be deceptive, implying that OMT has to be better than a comparison group. Consider language such as “similar in effect” unless the effect size is slightly in favor of mobilization.

3. Abstract - Conclusion:
   - The conclusion should contain general statements comparing OMT to control(s).
   - Conclusion about physical therapy and exercise are out of place here without addressing them in the results.
   - The first sentence on paucity of evidence is ambiguous. Do you mean lack of supporting evidence for efficacy, lack of RCT’s, or lack of quality RCT’s?

4. Methods - Synthesis of Results:
The criteria for pooling in a meta-analysis are presented. However, the criteria for synthesis and inference from non-pooled data are not included. State the a priori criteria for determining the superiority, inferiority, and equivalence of OMT. For example, were there effect size, statistical significance, or comparison type considerations?

5. Results – Results of Individual Studies
- Include the pain outcomes and group differences with SD’s and confidence intervals and/or p-values in the text (Inclusion in Table 2 would be helpful). This is the most important information for supporting the conclusions of the review.
- Describe the OMT regimen for the included trials.
- Some studies are not trials on chronic low back pain. See Comment 1 above.
- Table 2 and 4 should be simplified to the included trials.

6. Risk of Bias:
There is no discussion of the risk of bias for the studies. Which studies have high/low risk of bias? How does this impact inference?

7. Comparison to previous review:
Contrast the reviews and identify why the conclusion may be different. For example, the previous review included more studies, presumably not limited to chronic, nonspecific low back pain.

8. Conclusion:
- This is not supported. The outcomes data are not included to show the relative merits of treatment and controls.
- The similarity between mobilization and exercise and physiotherapy should be a separate sentence.

Minor Essential Revisions:
1. None.

Discretionary Revisions:
1. None.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**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.