Reviewer's report

Title: The influence of expectation on spinal manipulation induced hypoalgesia: an experimental study

Version: 2 Date: 23 October 2007

Reviewer: Howard Vernon

Reviewer's report:

General

-----------------------------------------------

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. The authors have omitted an important publication in the Introduction:


This paper is the first review of the work pertinent to this MS and includes all the studies that form the historical record (up to 2000) for the work the authors have undertaken.

2. In both the Introduction and the Methods, the authors should provide justification for the use of healthy subjects experiencing no low back pain. This is particularly important in light of the discussion of the putative mechanisms of manipulation in relation to effects on pre-existing effects of central sensitization. Presumably, normal subjects would have none of these pre-existing effects. Therefore, use of normals should be justified on both mechanistic and procedural grounds.

3. The title should be amended to: "The influence of expectation on spinal manipulation-induced hypoalgesia: an experimental study in normal subjects".

4. In the Methods, the authors do not describe the placement of the stimulating device on the skin of the back or leg. While they do reference their prior article with respect to the methods related to the leg, since the use of low back stimulation is novel for this MS, the placement of this stimulus should be described. For the sake of clarity, so should the placement of the lower limb stimulus.

5. In the Methods, the authors describe the use of three "psychological" questionnaires. These are not mentioned at all after this. Either include data on the results of these questionnaires or delete these in the Methods. If the authors were going to publish these in a subsequent MS, then they should not mention them in this MS and then ignore them after that.
6. In the Discussion, the authors should return to the issue of their use of normal subjects and provide some account of the differences between normals and pain subjects in relation to this type of single-session, experimental study. This discussion should be grounded in the studies referred to in the Introduction and which are also reviewed by Vernon (2000). Once again, mechanistic issues should be discussed.

The authors do refer to one issue: the lower expectations of normal subjects with respect to pain reduction as compared to those subjects actually in pain.

In my opinion, this is by no means the only difference between normals and pain subjects which could affect the results obtained in this study and which should be discussed by the authors.

7. The authors state that the "finding of significant influences of non-specific effects in the outcomes associated with SMT in healthy subjects is suggestive of the potential for a much larger effect in individuals seeking treatment for musculoskeletal pain that occurs over multiple sessions". In my opinion, this is only speculation, as there are likely important differences between studies of a single experimental session vs those of multiple sessions in usual treatment. In my opinion, the emphasis in the discussion here should be on the way that subjects (especially normal ones) might respond to a single, experimental session, and how these responses (and outcomes) might be different from those of patients pursuing treatment in usual clinical circumstances. This type of discussion is more pertinent to the issues in the MS and is more helpful to other researchers considering similar studies.

8. The authors should extend their recognition of the fact that only normal subjects were evaluated in this study by amending their conclusions as follows:

At the end of the Discussion: "...preliminary support for the influence of non-specific effects on the outcomes associated with a single session of SMT in normal subjects is worthy of further investigation".

In the Conclusion: "....on the hypoalgesia associated with a single session of SMT in normal subjects".

---------------------------------------------------------------------

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. In the Conclusion, there is some confusion about the location of hypoalgesia. Amend as follows:

"Additionally, the resultant hypoalgesia in the lower limb was independent of expectation.....

---------------------------------------------------------------------
Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

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.