Author's response to reviews

Title: Effects and predictors of shoulder muscle massage for patients with posterior shoulder tightness

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Author's response to reviews: see over
2/10/2012

Professor Timothy Shipley PhD
BMC Musculoskeletal Disorders

Dear Professor Shipley:

Please thank the reviewers for their very valuable and constructive comments/questions/suggestions. We highly appreciate their time and effort in reviewing the manuscript.

We have attempted to respond in the appropriate sections in this revised version. All of the changes are indicated with Underline Changes in the revised manuscript. The following page summarizes our changes to this manuscript. We hope the manuscript is acceptable. Let us know if you have any further questions.

Yours sincerely,

Sincerely,

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Editor

1. COMMENT: the discrepancy between your exclusion/inclusion criteria on clinicaltrials.gov and in your paper

   RESPONSE: The difference between clinicaltrials.gov and this manuscript is “mild glenohumeral joint hypomobility according to joint play assessment”. Because it is subjective and not reliable in our clinical tests, we remove the test. Therefore, we used [1] limitation of internal rotation ROM compared to the sound side; [2] stiffness in the posterior shoulder region in this manuscript. They are objective and reliable. Additionally, method to measure these criteria were presented in the manuscript.

2. COMMENT: add a CONSORT diagram

   RESPONSE: This was added in the Figure 1.

3. COMMENT: justify why you selected 20% improvement as your cut-point for FLEX-SF

   RESPONSE: We have added one reference with 20% change on an outcome measure, which is considered clinically significant (reference 33).

4. COMMENT: clarify your use of the word "random"

   RESPONSE: We used randomization process by Latin square order in the manuscript.

5. COMMENT: Was ITT used?

   RESPONSE: Yes, we analyzed data with and without drop-out data. Similar results were found in both ways.
6. COMMENT: include results for outcomes

   RESPONSE: Yes, we updated the results focusing on difference between two groups. **P14, results section**

7. COMMENT: block randomization process

   RESPONSE: We explained randomization (it should be 15 blocks) method and permutation lists in the manuscript. **P7 first paragraph**

8. COMMENT: a linear model to test for significance, rather than use the 2 group, 2 factor ANOVA

   RESPONSE: We kept our 2 group, 2-factor ANOVA instead of a linear model analysis. We evaluated baseline comparisons and found no difference between 2 groups. Thus, 2 group, 2-factor ANOVA was appropriate. Additionally, we revised the results as between results.

9. COMMENT: clarify stepwise logistic regression

   RESPONSE: We revised the description of stepwise logistic regression. **P12 last paragraph and P13 first paragraph**

10. COMMENT: clarify table 3

    RESPONSE: Odds ratio 300 is for 1 difference of slope. However, 1 difference is not within our data range. Thus, slope of 0.1 differences were used for example and we determine the odds ratio by $e^{(0.1 \times 5.71)} = 1.8$ because $B=5.71$. 
Reviewer: Jerrilyn Cambron

11. COMMENT: keywords issue
   RESPONSE: We have updated our keywords as massage, stiff shoulder, and range of motion.

12. COMMENT: old references
   RESPONSE: We did not change the references list because related references from PubMed database were included in the reference list. Although references were not recent, we believe that appropriate references were included.

13. COMMENT: abstract is missing a few key elements, like recruitment, sample size, statistical results of BETWEEN group analysis
   RESPONSE: We have added this information in the abstract including orthopedic and rehabilitation department recruitment, n = 30 per group, and difference between the massage group and control.

14. COMMENT: block randomization, why didn’t the groups end up with 30 in each group
   RESPONSE: We had 30 subjects per group. Some subjects were lost to follow-up.

15. COMMENT: third statement in the discussion section is not a complete sentence
RESPONSE: We revised the sentence “Subjects with different severity of restricted ROM are likely to respond differently to massage.” P17 second paragraph first sentence.

16. COMMENT: baseline demographics AND outcomes in tables 1 and 2
   RESPONSE: We kept 2 tables to prevent 4 tables, which were too much.

17. COMMENT: Is Table 3 accurate in the PD slope adjusted OR?
   RESPONSE: Yes, it is correct. Odds ratio 300 is for 1 difference of slope. However, 1 difference is not within our data range. Thus, slope of 0.1 differences were used for example and we determine the odds ratio by \(e^{(0.1 \times 5.71)}=1.8\) because \(B=5.71\).

18. COMMENT: forwards or backwards stepwise regression?
   RESPONSE: We used backwards stepwise regression.

19. COMMENT: inclusion and exclusion criteria in clinicaltrials.gov do not match
   RESPONSE: The difference between clinicaltrials.gov and this manuscript is “mild glenohumeral joint hypomobility according to joint play assessment”. Because it is subjective and not reliable in our clinical tests, we remove the test. Therefore, we used [1] limitation of internal rotation ROM compared to the sound side; [2] stiffness in the posterior shoulder region in this manuscript. They are objective and reliable. Additionally, method to measure these criteria were presented in the manuscript.
20. COMMENT: participant flow diagram as per the CONSORT guidelines
   RESPONSE: This was added in the Figure 1.

21. COMMENT: why 20% improvement was used
   RESPONSE: We have added one reference with 20% change on an outcome measure, which is considered clinically significant (reference 33).

22. COMMENT: the word “random” and randomization process
   RESPONSE: We used randomization process by Latin square order in the manuscript.

23. COMMENT: further describe the control group treatment
   RESPONSE: We revised the sentence “For the control group, same therapists applied light hand touch on the muscles (placebo control) 10 minutes two times a week for 4 weeks.”

24. COMMENT: pre-post results and between results, intention to treat analysis
   RESPONSE: We revised the results as between results and clarified intention to treat results. P14 first paragraph

Reviewer: Darcy Vavrek

25. COMMENT: comparisons of groups within a clinical trial
   RESPONSE: We revised the results as between results.
26. COMMENT: randomization method

RESPONSE: We explained randomization (it should be 15 blocks) method and permutation lists in the manuscript. P7 first paragraph

27. COMMENT: choice of a 2 group, 2-factor ANOVA and a linear model analysis

RESPONSE: We kept our 2 group, 2-factor ANOVA instead of a linear model analysis. We evaluated baseline comparisons and found no difference between 2 groups. Thus, 2 group, 2-factor ANOVA was appropriate. Additionally, we revised the results as between results.

28. COMMENT: The description of stepwise logistic regression is unclear

RESPONSE: We revised the description of stepwise logistic regression. P12 last paragraph and P13 first paragraph

29. COMMENT: intention-to-treat analysis

RESPONSE: We revised the description of results related to intention-to-treat analysis. P14 first paragraph

30. COMMENT: inconsistent results in table 3

RESPONSE: It was consistent in table 3. Odds ratio 300 is for 1 difference of slope. However, 1 difference is not within our data range. Thus, slope of 0.1 differences were used for example and we determine the odds ratio by $e^{(0.1 \times 5.71)}=1.8$ because $B=5.71$. 
31. COMMENT: Minor essential revisions, misspell etc.
    RESPONSE: We revised the manuscript accordingly.

32. COMMENT: n=30 per group in the abstract
    RESPONSE: We revised the manuscript accordingly.

33. COMMENT: re-writing sentences
    RESPONSE: We revised the manuscript accordingly.

34. COMMENT: presentation in the table, total number, % gender, title
    RESPONSE: We revised the manuscript accordingly.