**Reviewer's report**

**Title:** Periodized resistance training for persistent non-specific low back pain: A mixed methods feasibility study

**Version:** 1  **Date:** 09 Mar 2020

**Reviewer:** Chi Ching Gary Chow

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Basically, I found this article that is easy to follow. I enjoy to learn from this reading. The outcomes either the quantitative or qualitative measurements are clear, though the periodized resistance training is not a new method, but it is interesting to know the perspective of participants on the weight training programme.

I have some comments on the article and would like to have the authors helping to clarify. First, I am not quite sure if the purpose of the study had been clearly identified. The terminology of "feasibility" is too board to me. Is the study look for the effect of periodized resistance training on health outcomes and the participants' perception of the training protocol?

In the methods (page 4), please mention if the participants received the information of voluntary participation and the right of dropping out at any time they wanted.

In page 5, line 45, should "7. cervical vertebrae" replace by "7th cervical vertebrae"?

In page 8, "After 15 weeks, semi-structured focus group interviews were conducted with three of the training groups (10 participants)". Why do you select the 3 groups from the original 6 training groups (page 4)? How do you handle the selection bias?

In page 10, "The drop-out rate from baseline to 8 weeks was 4.2% and from baseline to 16 weeks it was 12.5%.” Do you think the dropout rate is high and how do you think the drop out rate related to the feasibility of the periodized resistance training?

In page 4, one of the inclusion criteria is "persistent non-specific LBP with a duration &gt;3 months, but in page 11, table 2, the table showed "&gt;12 months duration of current LBP is 95.8%". What is the purpose of reporting &gt;12 months instead of &gt;3 months? The inconsistency may need to standardize to minimize the confusion.

In this study, numerical pain rating scale (NPRS) (0-10 scale) was used to report the intensity of LBP, according to table 3 and 4, the current LBP (NPRS; 0-10) were 3.1 and 2.9 respectively during the baseline measurement, what is the meaning of 3.1 and 2.9 in the scale? I wonder if the participants really reduced the pain intensity by the treatment or just a placebo effect.
The discussion seems tend to discuss more relying on the focus group interview, but lack of in-depth discussion on the health outcomes. Because this article is a mixed method study design, it is necessary to make a balance on the discussion on the methods applied.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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