Reviewer's report

Title: Pilot comparative effectiveness study of surface perturbation treadmill training to prevent falls in older adults

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Reviewer: Daina Sturnieks

Reviewer's report:

This manuscript describes an interesting and important pilot study to determine the feasibility of a randomised trial of perturbation training for the purpose of falls prevention.

Major compulsory revisions
1. The aims described in the abstract need to be made clearer. The nature of the trial/training and the setting is not mentioned. Also, I am not sure that ‘clinical relevance’ is appropriate, as no definition of clinical relevance regarding faller status has been provided. Perhaps the aim is to determine the effect size that might warrant further study?
2. Provide an indication of the sample size in the abstract
3. Describing the difference in proportion of fallers as ‘substantially reduced’ needs to carefully considered and given some perspective. I suggest comparing the size of this effect to that of other falls prevention interventions reported in the literature.

Minor essential revisions
1. Was a 3 month retrospective question regarding falls events an appropriate method of falls surveillance? What is the reliability of this method?
2. Provide results of chi-square tests.
3. Were other PT objectives met, since the SPTT group had fewer sessions (presumably with time taken from normal therapy for perturbation training)?
4. If relative risks are to be reported, the confidence intervals would be useful.
5. Typo on line 3 of the Conclusion paragraph.
6. Define acronyms of outcome measures in Table 4.

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.