



iCAHE JC Critical Appraisal Summary

Journal Club Details

Journal club location:	ECH Inc.
Journal club Facilitator:	Jade Crosby
Journal club Discipline:	Exercise Physiology

Article/Paper

Yang, F., King, G., Dillion, L. & Su X. (2015). Controlled whole body vibration training reduces risk of falls among community-dwelling older adults. *Journal of Biomechanics*. 48. 3206-3212.

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Ques No.	Yes	Can't Tell	No	Comments
1	✓			<p>Was the purpose stated clearly?</p> <p>The primary purpose of this study was to systematically evaluate the effects of CWBV training on a battery of risk factors of falls among community-living seniors under the same vibration training protocol.</p> <p>The authors hypothesized that an 8-week CWBV training course could reduce the risk of falls among older adults by improving their body balance skill, functional mobility, lower-limb muscle strength and power, range of motion, cutaneous sensation level, bone density, and fear of falling. The findings from this study could provide important guidance towards establishing the optimal CWBV training protocol for reducing falls among elderly and contribute to the completeness of the current literature.</p>
2	✓			<p>Was relevant background literature reviewed?</p> <p>The issues of falls amongst older adults was discussed, the emerging evidence regarding whole-body vibration to reduce falls risk and the gap in evidence regarding 'treatment' protocols.</p>
3			✓	<p>Describe the study design. Was the design appropriate for the study question?</p> <p>This study used a cohort design. Where participants were recruited from is not that clear. A RCT would have been a better design with different treatment protocols forming different treatment arms, and measurements taken throughout treatment so we are able to map progress/changes.</p>
4	✓		✓	<p>Was the sample described in detail?</p> <p>A brief overview of the participants was provided in table 1. More detailed analysis regarding health conditions, falls history, functional independence ect. would have been helpful.</p> <p>Describe ethics procedures. Was informed consent obtained?</p> <p>All subjects gave written informed consent approved by Institutional Review Board.</p>

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5		✓	<p>Specify the frequency of outcome measurement (i.e., pre, post, follow-up)</p> <ul style="list-style-type: none"> • Risk factors for falls • Body balance • Functional mobility • Muscle strength • Chair-rise test • Range of motion • Cutaneous sensation on foot <p>Were the outcome measures reliable? Were the outcome measures valid? The study did not discuss the reliability or validity of the measures used. However, from experience I know that the following are reliable and valid in this population group.</p> <ul style="list-style-type: none"> • Berg balance scale • TUG • Chair rise test <p>The other test maybe, but the article does not discuss and I don't know them well enough to make a call</p>
6	✓		<p>Intervention was described in detail? Yes, refer to page 3208</p>
7		✓	<p>Results were reported in terms of statistical significance?</p> <p>Were the analysis method(s) appropriate? Mean and standard deviations (SD) were given as descriptive statistics. Paired t-tests were used to compare all fall risk factors between pre-training and post-training evaluations and to identify the improvements in these factors including BBS, TUG, strength, chair-rise, range of motion, sensation level, bone density, and fear of falling. The effect size (Cohen's dz) was also calculated for each risk factor to indicate the magnitude of the difference between evaluations.</p> <p>What was the clinical importance of the results? Were differences between groups clinically meaningful? Journal Club to Answer.</p>
8			<p>Did any participants drop out from the study? Three subjects withdrew from the intervention because of a schedule conflict (n=2) and a medical issue (n=1) which was not associated with the study.</p>
9			<p>What did the study conclude? Conclusions were appropriate given study methods and results?</p>
10	Journal club to discuss		<p>What do the study findings mean to practice (i.e. clinical practice, systems or processes)?</p>

11	What are your next steps? (e.g. evaluate clinical practice against evidence-based recommendations; organise the next four journal club meetings around this topic to build the evidence base; organize training for staff, etc.)
12	What is required to implement these next steps?

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