CAHE JC Critically Appraised Article Summary

Journal Club criteria

Date of submission	Pilot 2007
Journal Club location	Southern Cross Care
JC Facilitator	Jane Campbell

Clinical Scenario

Is home based exercise more effective than therapist supervised exercises in improving mobility in post acute stroke clients?

Review Question/PICO/PACO

P Post acute stroke

I Home based exercises

C Therapist supervised exercises

O Mobility

Article/Paper

Olney, Sandra J. A randomized controlled trial of supervised versus unsupervised exercise programs for ambulatory stroke survivors. *Stroke*.2006.Volume 37. Issue 2:476

Article Methodology:	Randomised Controlled Trial
Returned JC on:	Pilot 2007
By CAHE staff member:	Matt Sutton

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Ques No.	Yes	Can't Tell	No	Comments
1	✓			**Population**: • Subjects were recruited through a local stroke club, newspaper advertisement, and local clinicians in Kingston and Ottawa, Ontario, Canada • Age >20 years; • Thromboembolic or hemorrhagic cerebrovascular disorder with many, but not all, confirmed by CT scan; • Able to walk a total of 15 minutes with rests, with or without assistive devices (except a 4-point walker); • Able to tolerate activity for 45 minutes with rests; • No coronary artery disease of sufficient severity that would limit involvement in an exercise program as judged by cardiologist and determined by the Dobutamine Stress Echocardiography criteria; and • No contraindications to exercise testing as specified by American College of Sports Medicine (1995) and as reported by the cardiologist. **Intervention** Both programs involved: • 5- to 10-minute warm-up consisting of leisurely walking, mild stretching, and range of motion exercises of lower limbs; • aerobic exercise consisting of a graded walking program and/or cycling, depending on subject preference and capability; • strength training; and • a cool-down period consisting of 5 to 10 minutes of leisurely walking and muscular relaxation exercises. • Program took subjects ~1.5 hours to complete **Supervised** • exercise sessions conducted in 1.5-hour sessions 3 days per week for 10 weeks • class of 3 or 4 participants • Exs programs individualised and progressed weekly **Unsupervised** • 3 days per week for the first week followed by a home program for 9 weeks • Written and verbal instructions on advancing their exs **Outcomes** Activity and/or Participation measures: • 6 min walk speed (6MWS) • Human Activity profile (HAP) • SF-36 Physical Component summary score • SF-36 Mental Component summary; Impairment measures: • Sum of the strength of lower limb muscles • Physiological Cost Index (PCI)

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Ques No.	Yes	Can't Tell	No	Comments
2	✓			To minimise bias in the study a RCT is most appropriate. Remember that RCT remove the process of clinical reasoning when deciding on which intervention may be more appropriate for a client. In this case, for example, you may decide someone is more appropriate to carry out the unsupervised exercises if they have good social supports at home. Is it worth continuing? **YES**
3	✓			Randomised by computer-generated randomization list The groups were stratified by walking speed (>0.40 and <0.40 m/s). This ensures pre-test baseline equivalence for the most important outcome measure, the 6 minute walk test. Should stratification have been carried out for differences in the region participants were recruited from? Treatment assignments were concealed by the method of sealed envelopes. Most baseline characteristics were similar at baseline, however HAP and SF36 were higher in the supervised group.
4			✓	No blinding was implemented for this study, including assessors. There appears to be no reason why (other than cost) an independent assessor could have been blinded, thus increasing the likelihood of observer bias.
5			✓	An intention to treat analysis was carried out; however, drop outs were not accounted for. There were significant numbers of drop outs; however, this is to be expected for such a long term study.
6	✓			Measurements were collected at baseline and at 10 weeks, 6 months, and 1 year after cessation of the programs for both supervised and unsupervised
7		✓		A power calculation was carried out, however, it must be asked as to whether you feel a 0.2 m/s change in walking speed is clinically important or not. Expected drop out rates were not taken into account. The number of drop outs may have meant the sample size was too small at 1 year to minimise chance.

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Ques No.	Yes	Can't Tell	No	Comments
8				The results are presented as raw data and expected change assuming baseline equivalence. Figures given are means, standard deviations and p values to assess differences between groups. P values are only presented for adjusted scores. Outcomes that show statistical significance have been clearly indicated, showing stat significant improvements for 6 MWS for both groups. Differences between groups were not statistically significant. The improvements in HAP, SF36 were significant for the supervised groups (SF 36 Mental component only at 10 weeks), whereas there were only stat sig improvements in the SF36 Physical component at 12 months for the unsupervised group. It is hard to draw conclusions from the HAP and SF36 results given the differences at baseline of these measures. Bottom line: Both a supervised and unsupervised exercise program have shown to improve walking speed in chronic stroke patients. Self reported gains may be greater in supervised groups.
9				Looking at the adjusted results, the gains in the supervised groups generally have lower p values, thus making them more precise.
10		✓		Whilst discussion is provided over the limited generalisability of these results, the authors are correct in stating that this is likely to encompass a large proportion of CVA patients. The extent to which the population studied correlates with the patient population seen in each practice setting is a decision for each practice organisation.

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