International Centre for Allied Health Evidence

University of South Australia

International Centre for Allied Health Evidence

iCAHE

A member of the Sansom Institute

*i*CAHE JC Critical Appraisal Summary

Journal Club Details

Journal Club location	ECH Henley Beach
JC Facilitator	Melissa Wardle
JC Discipline	Exercise Physiology

Question

N/A

Review Question/PICO/PACO

P: N/A

I: N/A

C: N/A

O: N/A

Article/Paper

Vanroy, C, Feys, H, Swinnen, A., Vanlandewijck, Y, Truijen, S, Vissers, D, Michielsen, M, Wouters, K & Cras, P 2017, 'Effectiveness of active cycling in subacute stroke rehabilitation: a randomized controlled trial', Archives of physical medicine and rehabilitation, vol. 98, no. 8, pp. 1576-1585.

Please note: due to copyright regulations CAHE may be unable to supply a copy of the critically appraised paper/article. If you are an employee of the South Australian government you can obtain a copy of articles from the DOHSA librarian.

Article Methodology: Randomized Controlled Trial

Click here to access critical appraisal tool

International Centre for Allied Health Evidence (iCAHE)

CONTACTS
www.unisa.edu.au/cahe
iCAHE@unisa.edu.au
Telephone: +61 8 830 22099
Fax: +61 8 830 22853

University of South Australia
GPO Box 2471
Adelaide SA 5001
Australia

CRICOS Provider Number 00121B

University of South Australia

International Centre for Allied Health Evidence
iCAHE

A member of the Sansom Institute

Ques No.	Yes	Can't Tell	No	Comments
1	✓			**Did the trial address a clearly focused issue?** This study aimed to determine the effects of active cycling followed by a 9-month coaching approach on (1) aerobic capacity, (2) strength, (3) gait ability and speed in patients with subacute stroke. In addition, the authors wanted to investigate whether patients with walking inability at baseline obtain more benefit from aerobic training.
2	✓			**Was the assignment of patients to treatments randomised?** In a single-blind, randomized controlled intervention, patients were randomly assigned to an active cycling group (ACG) or a control group (CG) for 3 months of training in the center or at home if discharged. Patients were stratified after baseline according to the type of stroke, motor impairment severity, and aerobic capacity. They were assigned to the following 3 strata: (1) type; (2) the Rivermead Motor Assessment Gross Function Scale (RMA-GF) and (3) decreased aerobic capacity. A permuted block design of 4 was used, created by a computer random-number generator, with an allocation ratio of 2:2. After the 3-month program, in the ACG, a second group allocation was performed based on the initial stratified randomization procedure. Concealed allocations were achieved by contacting the holder of the allocation schedule who was "offsite."
3			✓	**Were all of the patients who entered the trial properly accounted for at its conclusion?** 6 patients dropped out of the study for reasons unrelated to the intervention. However, in flow diagram drop out reasons included - high blood pressure - refusal to continue - discharge home x 2 - alcohol abuse - psychologic problems No intention to treat analysis **Is it worth continuing?** YES
4			✓	**Were patients, health workers and study personnel 'blind' to treatment?** The assessor was blinded to the group assignment. Patients were aware of different programs but instructed not to inform the assessor.
5	✓			**Were the groups similar at the start of the trial?** The demographic characteristics of the participants are provided in Table 1. Patient characteristics showed no significant group differences before treatment.
6	✓			**Aside from the experimental intervention, were the groups treated equally?** The authors did make an effort to ensure that the only difference between the groups was the experimental intervention. Descriptions of the interventions were thorough and were provided in the intervention phase 1 and 2 sections.

International Centre for Allied Health Evidence (*i*CAHE)

CONTACTS
www.unisa.edu.au/cahe
iCAHE@unisa.edu.au
Telephone: +61 8 830 22099
Fax: +61 8 830 22853

University of South Australia
GPO Box 2471
Adelaide SA 5001
Australia

CRICOS Provider Number 00121B

University of South Australia

International Centre for Allied Health Evidence
*i*CAHE

A member of the Sansom Institute

7				**What are the results? How large was the treatment effect?** A nonsignificant difference was found in workload ($Watt_{peak}$) (P=.078) between ACG and CG after 3 months. Furthermore, after 3 months of cycling and after 9 months of coaching, all groups showed significant changes over time (P<.027) in peak oxygen consumption, $Watt_{peak}$, leg strength, and gait speed. Also, significant changes over time (P<.001) were found in the ACG and the CG in patients with walking inability at baseline. No significant differences between training groups were found over time. Although our study did not have objective exercise data from the training device during follow-up, the 3-month active cycling (AC) program combined with education sessions seemed an applicable method in subacute stroke rehabilitation. New long-term AT interventions should focus on coaching approaches to facilitate training after a supervised AC program. The small sample size impacted on the studies ability to find clinically significant group differences.
8				**How precise was the estimate of the treatment effect?** 95% Confidence intervals were not reported in the main body of the article, however they were reported in the supplementary tables. Given that 95% CI is the primary measure of precision, reporting them in the main body of the article would have been preferred. Mean +/- standard deviation and P values are reported. See table 2.
9	Journal Club to discuss			**Can the results be applied to the local population?** **CONTEXT ASSESSMENT (please refer to attached document)** – *Infrastructure* – *Available workforce (? Need for substitute workforce?)* – *Patient characteristics* – *Training and upskilling, accreditation, recognition* – *Ready access to information sources* – *Legislative, financial & systems support* – *Health service system, referral processes and decision-makers* – *Communication* – *Best ways of presenting information to different end-users* – *Availability of relevant equipment* – *Cultural acceptability of recommendations* – *Others*
10				**Were all important outcomes considered?**
11				**Are the benefits worth the harms and costs?**
12				**What do the study findings mean to practice (i.e. clinical practice, systems or processes)?**

13		**What are your next steps?** ***ADOPT, CONTEXTUALISE, ADAPT*** **And then (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.)**
14		**What is required to implement these next steps?**

International Centre for Allied Health Evidence (*i*CAHE)

CONTACTS
www.unisa.edu.au/cahe
iCAHE@unisa.edu.au
Telephone: +61 8 830 22099
Fax: +61 8 830 22853

University of South Australia
GPO Box 2471
Adelaide SA 5001
Australia

CRICOS Provider Number 00121B

University of South Australia

International Centre for Allied Health Evidence
*i*CAHE

A member of the Sansom Institute