Cross-sectional analysis of content reporting in randomised control trials (RCTs) of post-stroke circuit class exercise

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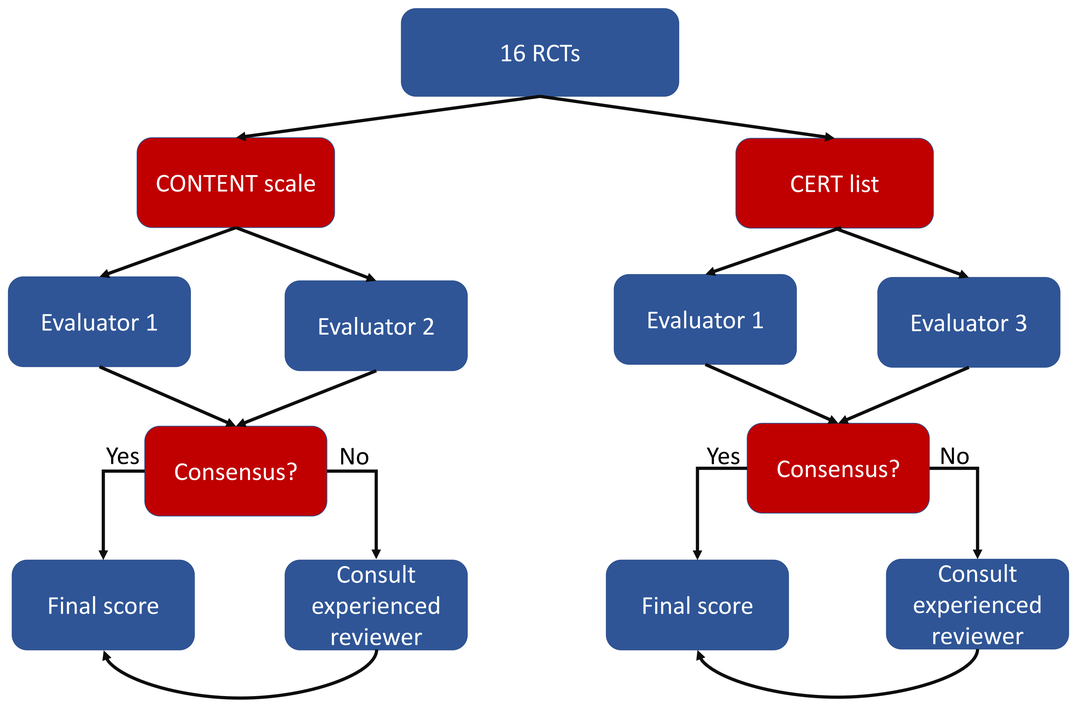
1. Introduction

- Stroke is the third leading cause of death in Canada and an important contributor to disability among Canadians[1].
- Older age has proven to be a risk factor for stroke and stroke hospitalizations are projected to increase in the near future; largely due to the ageing of baby boomers[2].
- Effective rehabilitation programs for stroke survivors are necessary to alleviate the symptoms of post-stroke patients.
- Circuit class exercise programs are known to be a cost-effective intervention improving mobility and gait among post-stroke patients[3].
- Accurate replication of studied exercise programs remains difficult.
- It is assumed that poor reporting leads to poor replication and is a major barrier to clinical implementation.
- **Aim:** This cross-sectional analysis aimed at evaluating content reporting among 16 moderate to high quality trials (PEDro score ≥5) that were included in a recent Cochrane systematic review[4] using the CERT list and the CONTENT scale.

2. Methodology

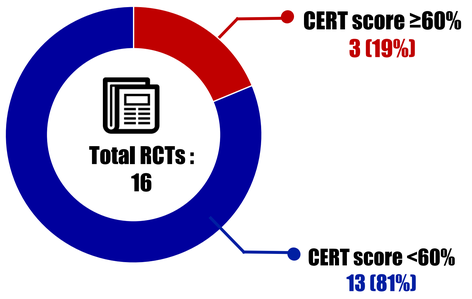
- Each trial was reviewed by two independent assessors using the CERT list and the CONTENT scale prior to establishing consensus.
- If consensus was not reached for a given item, a third experienced reviewer would adjudicate on the final score.
- Binary codes were used to quantify the results using yes=1 and no=0 for each criterion.
- A benchmark of 60% criterion met was established for reporting to be considered high quality, as seen with PEDro guidelines.
- Descriptive statistics such as mean and frequencies were carried out using excel spreadsheet.
- The CERT list is a 16-item (19 points in total) exercise reporting template developed through a modified Delphi technique to gain consensus from international exercise experts. It is the minimum data set considered necessary to report exercise interventions[5].
- The CONTENT scale is a tool similar to the CERT list which works on a 9-item scale.



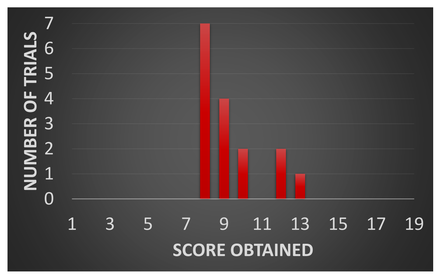
3. Results

- The CERT list mean score was 9.3 (SD ± 1.6) out of a possible 19 which represents an average of 49% criterion met. In addition, only 3 of 16 RCTs met 60% or more of the CERT list criterion.

Reporting of trials according to CERT list

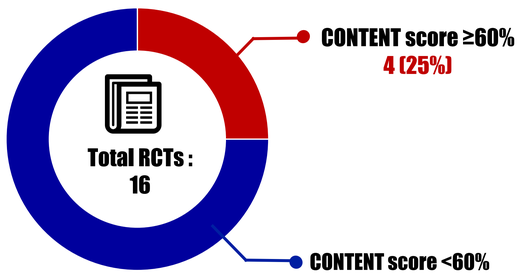


CERT list score frequencies



- The CONTENT scale mean score was 4.8 (SD ± 1.2) out of a possible 9 which represents an average of 53% criterion met. Also, only 4 out of 16 RCTs met 60% or more of the CONTENT scale criterion

Reporting of trials according to CONTENT scale



CONTENT scale score frequencies

4. Conclusions

- Both scales show very poor reporting among moderate to high quality RCTs.
- Poor reporting is very common[6], even among moderate to high quality RCTs, which can prove to be problematic for therapists who wish to offer and reproduce exercise programs for their post-stroke patients, especially if the program is effective.
- The implementation of standardized reporting guidelines should be considered to alleviate this problem by providing guidance to authors and investigators on how to adequately report their circuit class training RCTs.

5. Citations, acknowledgements & contact info.

Acknowledgements:

The team of researchers acknowledges and thanks the University of Ottawa for the funding of this research project. The lead researcher also thanks and acknowledges Dr. Lucie Brosseau for her outstanding supervision and contributions to this project as well as Jennifer O'Neil and Dr. Dan McEwen for their efforts and contributions to this project.

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References :

1 Government of Canada. (2017). Heart disease in Canada: Highlights from the Canadian Chronic Disease Surveillance System, 2017 - Canada.ca. Retrieved February 23, 2018, from https://www.canada.ca/en/public-health/services/publications/diseases-conditions/stroke-canada-fact-sheet.html

2 Public Health Agency of Canada. (2009). *Tracking Heart Disease and Stroke in Canada. Stroke*. Retrieved from https://www.canada.ca/en/public-health/services/chronic-diseases/cardiovascular-disease/tracking-heart-disease-stroke-canada-stroke-highlights-2011.html

3 Harrington, R., Taylor, G., Hollinghurst, S., Reed, M., Kay, H., & Wood, V. A. (2010). A community-based exercise and education scheme for stroke survivors: A randomized controlled trial and economic evaluation. *Clinical Rehabilitation*, *24*(1), 3–15. https://doi.org/10.1177/0269215509347437

4 English C, L. E. (2017). Circuit class therapy for improving mobility after stroke (Review) Circuit class therapy for improving mobility after stroke (Review). *The Cochrane Database of Systematic Reviews*, *6*, CD007513. https://doi.org/10.1002/14651858.CD007513.pub3

5 Slade, S. C., Dionne, C. E., Underwood, M., & Buchbinder, R. (2016). Consensus on Exercise Reporting Template (CERT): Explanation and Elaboration Statement. *British Journal of Sports Medicine*, *50*(23), 1428–1437. https://doi.org/10.1136/bjsports-2016-096651

6 Hoffmann, T. C., & Walker, M. F. (2015). "TIDieR-ing up" the reporting of interventions in stroke research: The importance of knowing what is in the "black box." *International Journal of Stroke*, *10*(5), 657–658. https://doi.org/10.1111/ijs.12524

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