



Cochrane Nursing Care Field – Cochrane Review Summary

Circuit class therapy for improving mobility after stroke: A Cochrane review summary

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ABSTRACT

After a stroke, people characteristically experience a loss of function. Reviewers (English et al., 2017) provide evidence-based insights into the value of instigating CCT into post-stroke rehabilitation. The review examines the effectiveness of CCT for people who have experienced stroke. The meta-analysis includes seventeen trials comprising 1297 participants. Results demonstrate that CCT is a worthwhile intervention to establish and support mobility post-stroke. The primary effect of CCT was to improve walking capacity, measured by a walk test. CCT improves gaining independence in activities of daily living.

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1. Background

Stroke is the second most common cause of death internationally (Feigin et al., 2014). Both ischaemic and haemorrhagic stroke are primary causes of long term conditions and affect an estimated 17 million people globally, and with it comes significant socioeconomic burden to communities (Bray et al., 2018). After a stroke, people typically experience a loss of physical and/or cognitive and even emotion function. The loss of function has a significant impact on quality of life (Kessler et al., 2014). Given the effects of stroke, an evidence-based therapy is indispensable in any recovery regimen.

Circuit Class Therapy (CCT) is an activity-based rehabilitation process, in a group setting, for people who have had a stroke. As the therapy is focussed on group activities, it is likely to reduce the cost of staffing, however currently this point of cost has not been clearly identified in research. Activities are managed so they suit the individual patient, by undertaking exercises that are repetitive and yet tailored to ensure ongoing progression to achieve improved mobility (English and Hillier, 2011). Lawal et al. (2015) explain that some people will require numerous repetitions of activities to ensure neuroplastic change occurs. A programme of physical exercise is essential to recovery (Saunders et al., 2014). The repetition of these activities could also be reinforced in usual

nursing care when the patient is not in structured therapy. Nurses involved in stroke rehabilitation will be aware of numerous guidelines recommending patients spend a minimum of 30 min, and up to three hours a day in therapy (CCT may be one of various therapies) (National Stroke Foundation, 2018; Stroke Foundation of New Zealand, 2010), the importance of therapy after a stroke cannot be over stated.

2. Objectives

This review examines the effectiveness of CCT for people who have experienced a stroke and are 18 years or over. Does physical therapy delivered in the form of CCT improve mobility for adults with stroke, more so when compared to usual treatment?

3. Intervention/methods

Seventeen trials were included in the review comprising 1297 participants in the meta-analysis. The CCT was conducted in either inpatient hospital or community settings and was commenced within one month of stroke onset through to more than one-year post-stroke. CCT was implemented to varying degrees, for example, for a minimum of once a week for 4 weeks through to 5–7 times a week for a prolonged period. CCT sessions might extend from 30 to 60 minutes and involve the intensive and repetitive practice of task-specific functions. The CCT is delivered through groups with a therapist in attendance, with a ratio of at least one staff member per three people, where the focus is on improving the participant's function through the repetition of tasks and exercises. Sometimes activities are arranged in the form

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of circuit training or there are individualised programs devised by the therapist for the participant within the group setting. Overall the interventions are devised to improve mobility for people with stroke to focus on becoming task independent; an example being able to walk by oneself.

4. Results

The review established clinical heterogeneity in the meta-analysis, a reflection of day-to-day patients seen in clinical contexts that nurses work in everyday. The primary outcome of interest, CCT, was assessed using the Six Minute Walk Test (distance walked in 6 min: 6mWT) to assess the walking capacity of participants. Of the 1297 participants, 835 participants were assessed using the 6mWT against for the primary outcome of interest. The results demonstrate that CCT is a worthwhile and superior intervention to establish and support mobility post-stroke (MD 60.86, 95% CI 44.55–77.17; $I^2 = 27\%$). The review also examined the difference in effect of the therapy for participants who started the CCT closer to the onset of stroke rather than those who waited a longer period to start CCT. The group that started later appeared to show improvement however the evidence did not show a significant difference between the two groups ($P = 0.14$).

5. Conclusions

The English et al. (2017) systematic review indicates the worth of introducing CCT into a rehabilitation programme for recovery after stroke. The primary effect of CCT was to improve walking capacity (measured by the 6mWT), shown to benefit function for people post-stroke. Some secondary outcomes from the meta-analysis show effects in favour of CCT, it is worth referring to the original review. Improvements in mobility are found for those people early after stroke or even later after stroke. In comparison to other interventions included in the review, there is not enough evidence to conclude if CCT is associated with an increased falls risk. The review is at pains to recommend that precautions against falls should be taken if CCT is instigated. The reviewers are transparent about the moderate quality of evidence included in their systematic review, a consideration for clinicians to bear in mind when translating the review findings to clinical practice.

6. Implications for practice

As a clinician, it would advantageous to know more about how CCT can enhance a holistic recovery. For example, it would be useful to know if CCT improves the quality of life for those

undertaking a programme. In addition what are the associated psychosocial benefits for patients? We know from the English et al. review the physical results are positive, but is everyone satisfied with such an intense programme? Further application and research would link the success of CCT to regaining independence in activities of daily living and connectedness to social networks.

Initiating CCT into a therapeutic regimen may come at a cost of specific staffing requirements as is mentioned in the review (English et al., 2017). However the projected outcomes from CCT are likely to be far reaching from a nursing perspective: an improvement enhances independence and self-esteem. Future research may include economic evaluation to help establish the worth of therapies such as CCT.

The literature indicates that stroke care for older adults is not always equitable; older people with stroke, who are entering healthcare services, may not be receiving optimal therapy (Bhalla et al., 2004). To counter this inequity Bhalla et al. (2004) suggest more care in alignment of health services to ensure equal access is afforded to therapies. CCT, as reviewed by English et al. (2017), is an excellent starting point for nurses working with people after stroke.

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