The Effectiveness of Constraint Induced Movement Therapy in Stroke Patients In the OT Practice

Emma Oliver, Sarah Pirnie, Tara Schorr

Introduction: Stroke is the second most common cause of death worldwide. Stroke occurs when blood flow to an area of a brain is cut off and brain cells become deprived of oxygen. Sustaining a stroke typically results in severe limitations to occupational engagement due to motor impairment. Stroke patients can suffer from hemiparesis and often have marked limitations in upper limb-function. Constraint-induced movement therapy (CIMT) has been used in rehabilitation practice for many years in an attempt to overcome upper limb motor impairments. Original CIMT includes constraining of the non-paretic arm and task-oriented training. Modified versions of CIMT are not always as intensive as original CIMT. "The original and modified types of CIMT have beneficial effects on motor function, arm-hand activities, and self-reported arm-hand functioning in daily life, immediately after treatment and at long-term follow up" (Kwakkel, Veerbek, van Wegen, & Wolf, 2015). As revealed by a study that examined the effect of CIMT on execution of tasks following a moderate to severe stroke, CIMT can have a significant impact on particpation in activities individuals have not attempted since before their stroke (Bonifer, Anderson, & Arciniegas, 2005).

Methodology: A review of literature related to the uses and effectiveness of CIMT was performed. A large percentage of the literature involved the effectiveness of CIMT in stroke patients, compared to a typical protocol of physiotherapy. The older adult population that is affected by stroke was found to be the largest population that engages in CIMT. The results of the studies conducted that evaluate the effectiveness of CIMT are represented on this infographic.

Results: Studies indicate that CIMT is more statistically significant as an intervention in functional recovery of upper extremity in acute stroke patients, when compared to conventional rehabilitation therapy (El-Helow et al., 2015). It has been found that CIMT experimental groups show large improvements in the amount they used their affected upper extremity outside of the OT environment, showing better improvement than patients in conventional physiotherapy (Taub et al., 2006). Studies indicate that CIMT may be more effective than conventional rehabilitation therapy in regards to affected hand function, when evaluated using the Modified Movement Assessment Scale (Mickeviciene et al., 2015). CIMT used as a therapeutic intervention proved to have a significant impact on FMA total scores as seen from the mean increase in 7.0 points prior to treatment compared to scores following treatment (Bonifer, Anderson, & Arciniegas, 2005). As concluded from a study by Schaechter et al., 2002, participants in the constraint induced thereapy group demonstrated preintervention MAL score of 28% as compared to a post intervention MAL score of 62%.

Discussion: The findings of the various studies analyzed revealed that CIMT is a promising intervention for individuals who have had a stroke. Further, this form of therapy has proved to be useful for various types of strokes as well as people of all ages. The degree of improvement in

motor function of the affected limb has varied across studies, but regardless all CIMT studies demonstrate positive outcomes. Likewise, a large percentage of CIMT outcomes have revealed an increased amount of use of affected limb outside of the occupational therapy clinic. Correspondingly, CIMT appears to have clinical significance in the field of occupational therapy as it can positively impact the execution of tasks and make individuals more apt to engage in meaningful occupations. Overall, CIMT is a safe and feasible therapeutic measure that can reap significant benefits.

References

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