

Stroke Rehabilitation and Physical Therapy Interventions: A Short Commentary

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Abstract

Stroke serves as the major cause of long term disability. Sedentary life style, increased cholesterol level and cardiac diseases are major risk factors for stroke. Physical therapy interventions includes Boobath/neurofacilitatory approach, adjuvant therapies (electrical stimulation), isolated concept (stretching and strengthening techniques), constrained induced movement therapy (CIMT) and mirror therapy are used for stroke rehabilitation.

Keywords: Stroke rehabilitation; CIMT; Neurofacilitatory approach; Boobath

Abstract

Stroke is the major cause of long term disability and increase economic burden. Hypertension and cardiac diseases are the major contributing risk factor. Stroke is the major reason for long term dependence due to decline in cognitive function. Almost more than 60% of stroke survivors suffer from moderate motor and sensory impairment that can be treated with physical therapy intervention.

Physical Therapy Intervention

Physical therapy interventions improve quality of life. Different techniques serve to decrease the level of impairment and improve ability to perform activities of daily life. As physical therapy interventions reduces the long term disability so, it also reduce economic burden. Different interventions CIMT, mirror therapy, adjuvant therapies, isolated concept and neurofacilitatory approach have been used for rehabilitation of stroke.

Constrained Induced Movement Therapy

Constrained induced movement therapy was developed to improve upper limb function after stroke. It involves constraining non-paretic arm [1]. Recently a systematic review was conducted on CIMT and improvement in upper limb function and it was concluded that CIMT is an effective intervention to improve upper extremity function after stroke [2].

Mirror Therapy

Mirror therapy is supposed to produce visual illusion which leads to improve upper limb function on paretic side [3]. Recently in 2017 a systematic review was conducted on effectiveness of mirror therapy for stroke patients and concluded that mirror therapy is effective to improve motor function and to enhance movement performance [4].

Adjuvant Therapies

Adjuvant therapies include electrical stimulation. Neuromuscular electrical stimulation (NMES), functional electrical stimulation (FES), therapeutic electrical stimulation (TES) are used for stroke rehabilitation. Result of a recent review showed that these electrical stimulations improve motor recovery by increasing muscle strength and reduce muscle spasticity [5]. A systematic review conducted by Eraifej et al. [6] in 2017 supported that functional electrical stimulation (FES) is significantly effective to improve motor function after stroke.

Isolated Concept

Isolated concept involves muscle stretching and muscle

strengthening. Stretching of spastic muscle and strengthening of weak muscles play important role in stroke rehabilitation. A study was conducted to assess the effectiveness of strength training programme and reported that strength training adds a significant improvement in stroke rehabilitation [7].

Neurofacilitatory Approach

Neurofacilitatory approaches include Proprioceptive neuromuscular facilitation (PNF), Burnstrom stages of motor recovery and neurodevelopment techniques (NDT)/Boobath approach. These approaches based on reflex theory and aimed to remediate impaired components by sensory stimulation of patterns. A study conducted by Yazici et al. [8] reported that Boobath/NDT is effective to improve balance, mobility and overall performance of motor function among stroke patients.

Conclusion

Stroke is associated with long term disability. Numerous physical therapy interventions are used to improve function after stroke. Risk of stroke is increased with increased cholesterol, cardiac diseases and inactive life style. Physical therapy interventions neurofacilitatory approach, isolated concept, adjuvant therapies, mirror therapy, constrained induced movement therapy are effective to improve function after stroke, make the person able to perform activities of daily living and improve quality of life.

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Received January 05, 2018; Accepted January 18, 2018; Published January 25, 2018

Citation: Manzoor S (2018) Stroke Rehabilitation and Physical Therapy Interventions: A Short Commentary. *Int J Neurorehabilitation* 5: 304. doi: 10.4172/2376-0281.1000304

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