

Effect of Mirror Therapy on Motor Function in Extremities and Daily Activities in Stroke Patients

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Abstract

Stroke is disease cause of partial loss some of brain functions that can lead to many of disorders, such as motor, perception, language, sensory, and can lead to limitation in daily activities. Mirror therapy (MT) is a new therapeutic method used for stroke patients. This short review was intended to assess the effect of the MT on motor function in extremities and daily activities in stroke patients. The electronic searching was conducted in Google Scholar and PubMed. this review paper confirmed that that apply of MT on stroke patients give benefits and significant improve the some of motor function and some of daily activities. Further studies are essential to verify MT long-term effects and its impact on daily activities among stroke patients.

Keywords: Stroke, Mirror Therapy, Motor Function, Daily Activities

Introduction

Stroke is a disease that cause of partial loss some of brain function, and may lead to many disorders, such as motor, perception, language, and sensory. In addition, stroke can lead to limitation in daily activities, such as eating, drinking, and dressing ⁽¹⁾. Stroke is two types: Ischemic (88%) and hemorrhagic (12%) ⁽²⁾.

Stroke occur between 2.7 - 4.7 per 1000 people, and one of three disease cause of death, and one-third of the patient's development of permanent disabilities ⁽³⁾. More than 60% of stroke patients have impaired of daily

activities related to neurological deficits ⁽⁴⁾. Hemiplegia is paralysis in one side of body occurs in one upper extremity and one lower extremity occurs from stroke ⁽⁵⁾.

Rehabilitation play very important role in the recovery of patients after stroke, one of these methods is Mirror Therapy (MT). The MT is a new therapeutic method use for patients who have hemiparesis or motor disabilities occur from stroke, this method shows positive outcomes with those patients ⁽³⁾. It applies by place the unaffected limb front the mirror and the affected limb back the mirror, then the movement of unaffected limb give for patient illusion this occur in affected limb ⁽⁶⁾. The MT was used with stroke patients because it is low cost, easy to use, and can be applied at patient's home ⁽⁷⁾.

Many people have inadequate information about the benefits of MT. The current study may add to knowledge about this type of therapy, and so to improve movement in affected limb and help patients to take care

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of themselves. This short review paper was intended to assess the effect of the MT on motor function in extremities and daily activities in stroke patients.

Method

Search methods: The electronic searching was conducted in a different database: Google Scholar and PubMed. Key search terms used: Stroke, Mirror Therapy, Motor Function, Daily Activities.

The studies that focused on the topic of MT were published in English between 2015 and 2020 were included in the review. While, studies published before 2015 were excluded.

Search outcome: Exploring of literature yield about 35 studies for review, after reading the studies about 25 study were excluded and 10 studies met the inclusion criteria.

Discussion

It is uncertain exactly how MT works, it's been proposed that this illusion causes brain changes that assistance the patient improve his mobility. The MT is comparatively easy to do, and has the possible to be accomplished at individual household ⁽⁸⁾.

The MT was used to increase motor function after stroke. Many studies found the MT improve motor function and daily activities in stroke patients. A study aimed to examine the effects of MT together with exercise tasks on the function of the upper limbs and activities of daily living. The study finding confirmed that MT is more effective comparing with conventional therapy for the training of stroke patients to develop their upper limb function and activities of daily living ⁽⁹⁾.

Also, the MT with the conventional stroke rehabilitation program was examined. A study explored the effects of mirror therapy on spasticity, pain intensity and upper limb motor functions among patients with hemiplegia accompanied by complex regional pain syndrome type 1. The study found that adding of MT to a conventional stroke rehabilitation program provides more progress in the upper limb motor functions and pain perception than conventional therapy alone ⁽¹⁰⁾. Another recent study found that the use of MT in stroke patients have significant improve the level of motor function ⁽²⁾.

Past studies found evidence of a significant effect of MT on motor function compared with other interventions. Besides, there was evidence of a significant effect of MT for walking velocity, passive range of motion for ankle dorsiflexion, step length and balance capacity ⁽¹¹⁾. Another study found that the use of MT in rehabilitation treatment for stroke patients can improve of lower limb motor function ⁽¹²⁾.

Finally, there was similarly some confirmation that MT may decrease pain. However, the level of evidence is inadequate, and further investigation is required to evaluate the influence of MT on pain ⁽¹³⁾.

Conclusion

These short review shows the MT is safe and effective and it has benefits in improve some of the motor functions in extremities and daily activities in stroke patients. This short review paper provides some information about the benefits of MT to improve motor function and daily activities in stroke patients. Further studies are necessary to verify MT long-term effects and its impact on daily activities among patients in different stage of stroke.

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Ethical Clearance: Taken from Princess Salma Faculty of Nursing, AL al-Bayt University ethical committee.

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