



**Service Priorities and Programmes**  
**Electronic Presentations**

**Convention ID:** 126

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**Effect of Mirror therapy on Pain, Sensory, Motor Recovery and Functional Outcome of Patients with Orthopaedics Hand conditions**

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**Keywords:**

mirror therapy

orthopaedics hand

**Introduction**

Orthopaedics hand conditions often lead to loss of mobility, sensibility and function. Mirror therapy combined with conventional physiotherapy became a therapeutic alternative in hand rehabilitation to improve pain, sensory, motor and functional activities over the last ten years. A number of studies were published on effect of mirror therapy on orthopaedics hand conditions. However, the effectiveness of mirror therapy in local clinical setting has not been evaluated.

**Objectives**

To analyze the effect of mirror therapy on pain, sensory, motor recovery and functional outcome of patients with orthopaedics hand conditions.

**Methodology**

This was a quasi-experiment study. Patients of orthopaedics hand conditions with sensory deficit were included. Patients having the conditions of severe peripheral nerve palsy, other neurological disorders, visual impairment or cognitive impairment were excluded. They were assigned to either mirror therapy group and conventional exercise group. Mirror therapy group was educated to have home-based mirror therapy exercises. Conventional exercise group was instructed to have conventional home-based hand exercises. Outcome measures included Numeric Pain Rating Scale, light touch sensation by self-perceived percentage change, handgrip strength by dynamometer and self-reported quick Disabilities of Arm, Shoulder and Hand (DASH) questionnaire. Outcomes were measured at first physiotherapy consultation and upon discharge. Collected data was analyzed by independent t-test for inter-group and paired t-test for intra-group.

**Result**

A total of 61 subjects (36 males and 25 females) (mean age = 46.9, ranged from 15 to 81) were recruited from Nov 2016 to Oct 2017. For intra-group Pre and Post comparison, both mirror therapy and conventional exercise groups showed significant improvement in all outcome measures. For inter-group comparison, in light touch sensation by self-perceived percentage change, the mean change in mirror therapy group (8.3%) was larger than in conventional exercise group (3.9%), although there was no statistical significant difference. There were no significant differences in other

outcome measures in between groups.

Mirror therapy has shown to be as effective as convention home exercise in terms of pain, sensory, motor recovery and functional performance of patients with orthopaedics hand conditions. It can be introduced as an alternative therapy to diversify the treatment option in our local practice. Potential additional therapeutic effect on sensory recovery from mirror therapy is also addressed. Further study with larger sample size is warranted to provide more evidence on its effectiveness.