



**Service Priorities and Programmes**  
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**Effect of Combination of Mirror Therapy and Transcranial Direct Current Stimulation to Upper Limb Functions of Patients with Subacute Stroke in Day Rehabilitation Centre - a Pilot Study**

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**Introduction**

According to Hospital Authority, there were about 20000 acute admissions of stroke in 2015-2016. Hemiparesis is a common symptom after stroke. Studies showed that 55%-77% of stroke survivors have limitation on their upper limbs function. Upper limb function affects the quality of life of stroke survivors. Both mirror therapy and TDCS are inexpensive and manpower-saving treatment techniques. Combining mirror therapy with TDCS may further improve the upper limb rehabilitation in day rehabilitation centre (DRC) training.

**Objectives**

To investigate whether combining mirror therapy with TDCS can improve the upper limb functions during DRC training.

**Methodology**

4 patients of subacute stroke with marked upper limbs dysfunction were recruited to join the study from DRC in North Lantau Hospital. The patients who cannot follow command were excluded. 2 patients who were willing to receive the intervention were recruited to the study group. Another 2 patients who were unable or refused to have the intervention were allocated to the control group. The study group received thirty minutes of cathodal TDCS of 1.5mA with the mirror therapy simultaneously. The patients were asked to perform wrist and hand movement "as good as possible". The intervention was 2 sessions weekly for 5 weeks in addition to the conventional training. The primary outcome will be the Fugl-Meyer assessment upper extremity (FMA-UE) motor part, Box and Blocks test and the functional test for the hemiplegic upper extremity (FTHUE). The outcomes were measured at the initial assessment and after 10 sessions of training.

**Result**

The study group demonstrated good progress after receiving TDCS and mirror therapy. The mean score of FMA-UE motor part increased from 24 to 37.5 with the control group from 18 to 18.5. Both cases in the study group also improved for 1 level

in term of the FTHUE while the control group remained unchanged. Only one case in study group showed positive result in the box and blocks test while others showed no improvement. The pilot study suggested combining TDCS and mirror therapy is a possible adjunct in additional to the existing stroke rehabilitation programme in DRC. Large scale studies are suggested as the sample size in this study is small.