

Thesis Title A Study of the Effects of Continuous Passive Motion in the Prevention of Finger Joint Stiffness after Injury.

Name Prapaisri Watanasomsiri

Degree Master of Science (Physiotherapy)

Thesis Supervisory Committee.

Charoen Chotigavanichaya, M.D.

Prayode Boonsinsukh, B.Sc, M.Sc.

Panupan Songcharoen, M.D

Urairat Subunvilas, B.Sc, M.Sc.

Date of Graduation 27 July B.E. 2535 (1992)

ABSTRACT

This study was designed to evaluate the efficacy of the use of Continuous Passive motion(CPM)for the fingers with active exercise to prevent joint stiffness. The effects of 1 hour/day of CPM for the fingers with active exercise were compared with the effects of active exercises alone. 40 female and male patients with 59 phalangeal fractures, age between 15-42 years were randomly allocated into 2 groups: 20 patients with 29 phalangeal fractures in the controlled group received only active exercise 10 sessions daily as a home program for 2 weeks, and 20 patients with 30 phalangeal fractures in treatment group received CPM 1 hour/day with the same program of active exercise as the controlled group for 10 times in 2 consecutive weeks.4 measurements of total active range of motion

(TAM) and total passive range of motion (TPM) within 2 weeks and measures of hand volume, grip strength, hand function test were taken in the initial and final visit in both groups. The personal information, change of pain and attitude toward the CPM hand unit were recorded.

The results show that in the treatment group the TAM, TPM, hand volume and the change of pain intensity improved significantly ($P < 0.01$), grip strength at $P < 0.05$, and 4 items of hand function test i.e. card turning, simulate feeding and picking up large light objects and heavy objects at $P < 0.05$. But the other 3 items i.e. writing, pick up small objects and stacking checkers were not statistically significant difference. For the attitude toward the CPM treatments changed to the positive view to be 85% (N=17).

The study suggests that the CPM with active exercise would be more effective treatment for preventing joint stiffness than the use of active exercises alone.