

Thesis Title : Comparative effect of flexion and extension exercise in mechanical back pain patients

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#### ABSTRACT

The study is designed to compare the effect of flexion and extension exercise on mechanical low back pain patients. One hundred and twenty-three patients are included in this study. The criteria for selecting the patients are: (1) the age of the patients is between 20 and 45 years, (2) duration of symptoms is more than three weeks, (3) the musculature is normal (4) no sign of neurological involvement is detected (5) straight-leg-raising test is negative, and (6) there is no fixed contracture. The patients who were included in this study had been screened by the orthopaedist. They were carefully interviewed again concerning the nature of pain and medications and their daily activity. The pain was recorded quantitatively by visual graphic rating pain scale. Physical examinations were then performed to rule out neurological deficit. The spinal motion was measured by goniometer, spinal flexibility by modified methods of Moll (1971) and Beattie (1987) and back strength by back dynamometer.

The patients were randomly divided into three treatment groups: the patient who belonged to group I (control group) had received Ibuprofen 600 mg/day only (N=32), group II (N=44) had received Ibuprofen 600 mg/day and extension exercise and group III (N=47) had received Ibuprofen 600 mg/day and flexion exercise. The back hygiene was instructed in every cases. After three weeks of treatment the patients with no improvement were referred to Rehabilitation Department for further treatment.

From this study it was found that exercise therapy is safe and effective to treatment of mechanical low back pain, particularly in patients with young age (less than 25 years), light-manual-workers and acute (duration less than 3 months) or chronic recurrence symptoms (duration more than 1 year).

Instruction of back hygiene which is base on scientific knowledge of physiology and their relationship to daily activity provides the patients to take more responsibility to their own back pain and have more satisfactory outcome to the treatment. Since the main objective of exercise, both flexion and extension exercise, are strengthening the trunk musculature to distribute less pressure or load on spinal structure, instruction of back hygiene associated with exercise was the safe and effective to treatment of low back pain.

It was also found that patients with restricted extension due to pain or restricted flexion due to pain have responded well to exercise while patients with restricted both flexion and extension due to pain have not. 63.7% of patients who restricted extension have complete recovered from pain due to extension exercise and 40% due to flexion exercise; and patients

with restricted flexion due to pain have complete relieved from pain 45% due to extension exercise and 33.3% due to flexion exercise. Therefore, extension exercise seem to be the effective treatment to the low back pain although statistically significant difference were not detected.