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The effectiveness of a 12-week Clinical Pilates Programme in patients with Chronic Low Back Pain: a pilot study

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Introduction

Low back pain (LBP) is one of the most common health problems, which may cause functional limitation. In the array of available interventions, Pilates is a type of therapeutic exercises focusing on strength, core stability, flexibility, muscle control, posture and breathing pattern. However, limited evidence with controversial results has been shown in its effectiveness in treating people with chronic non-specific LBP.

Objectives

To investigate the effectiveness of Clinical Pilates programme for patients with chronic non-specific LBP.

Methodology

Subjects were recruited from the out-patient physiotherapy unit of Kowloon Hospital. Inclusion criteria were: age between 18-60 years old with a diagnosis of non-specific LBP for more than three months. Subjects in the clinical Pilates exercise group (PEG) were given one-to-one supervised Pilates exercises, while traditional back exercises were taught to the conventional exercise group (CEG). Both groups received 30-minute exercise training at the frequency of twice per week for 12 weeks. Outcome measures including pain intensity using Numeric Pain Rating Scale (NPRS), trunk range of movement, flexibility, muscle strength and endurance, Numeric Global Rating of Change Scale (NGRCS), Roland Morris Disability Questionnaire (RMDQ) and Tampa Scale of Kinesiophobia (TSK) were captured. Chi-square and t-test were conducted.

Result

Twenty patients (male=2, female=18, mean age=46) were recruited. The baseline characteristics of the groups were comparable. There was significant reduction in pain intensity in both groups after programme. For between-group comparison, subjects in PEG demonstrated significant greater pain reduction (63% decrease in NPRS from 6.2 ± 2.2 to 2.3 ± 1.0) than CEG (33% reduction from 6.3 ± 1.6 to 4.2 ± 1.4 ($p < 0.05$)). There was significant improvement in the score of NGRCS in both PEG and CEG

($p < 0.001$). Subjects in the PEG demonstrated a greater improvement in TSK as compared to CEG (23% versus 15%; $p < 0.05$). After training, both groups demonstrated significant improvement in flexibility and muscle strength with greater improvement shown in PEG than CEG ($p < 0.001$). In summary, both Clinical Pilates exercises and conventional back exercises were effective in the management of patients with chronic low back pain, with our result in favor of Clinical Pilates exercise programme in achieving greater pain relief and less kinesiophobia.