Service Priorities and Programmes

Electronic Presentations

Convention ID: 412
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The effects of Pilates training program for shoulder impingement syndrome

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Keywords:
Pilates
Shoulder impingement

Introduction

Emerging evidence supported that scapular muscle training could effectively improve scapular dyskinesis and alleviate pain in patients with shoulder impingement syndrome (SIS). Pilates is a body conditioning exercise which focuses on conscious control of muscle actions; that improves arm-trunk posture and biomechanical patterns during shoulder-specific functional task.

Objectives

The purpose of this study is to investigate the efficacy of Pilates training program on pain, scapular position, range of motion and upper-extremity function for SIS. Findings of this study could hopefully gain knowledge for refining our shoulder rehabilitation program.

Methodology

Twenty-four patients (aged 45-65) with SIS that screened with scapular dyskinesis, were randomly assigned to Pilates group (n=12) and control group (n=12). Pilates group (PG) received a supervised Pilates program, whereas control group (CG) received the supervised shoulder exercise program twice a week for 6 weeks. Both groups were also instructed to perform a daily home exercise program for 6 weeks. Outcome measures including Numeric Pain Rating Scale (NPRS), range of motion (ROM), Shoulder Pain and Disability index (SPADI), and scapular position measurement were charted before and after the 6-week program. Wilcoxon Signed and Mann-Whitney U test was used to determine within- and between-group difference. Significance level was set at $p<0.05$.

Result

No significant difference in demographic data was found between the two groups. Pain level on NPRS was significantly reduced in CG ($p=0.002$) and PG ($p=0.001$). Both groups had significant increase in shoulder flexion and abduction ROM ($p<0.05$). Explicitly, PG showed a greater improvement in shoulder ROM when compared to CG ($p=0.001$). Significant improvement was found in shoulder function, with SPADI decreased by 43.9% in CG ($p=0.002$) and 46.8% in PG ($p=0.002$). PG demonstrated significant improvement in scapular position with the arm abducted at 45 degrees ($p=0.008$) and 90 degrees ($p=0.009$), while CG demonstrated improvement in the

same variable at 90 degrees (p=0.034). Both Pilates training and supervised shoulder exercise program are effective in pain reduction, increasing shoulder range of motion and enhancing shoulder function in patients with shoulder impingement syndrome. The Pilates group demonstrated an improvement in scapular control at various shoulder positions and has additional benefits in improving shoulder range of motion and function.