規律腹背肌運動訓練對慢性下背疼痛患者成效之探討

The Effectiveness of Abdominal and Back Muscle Exercise Program on PatientsWith Chronic Low Back Pain

中文摘要

本研究目的有三：（一）了解慢性下背痛患者疼痛程度、日常生活影響程度、身體柔軟度和背部肌力的情形。（二）分析規律腹背肌運動訓練，對改善慢性下背痛患者疼痛程度、日常生活影響程度、柔軟度和背部肌
力之成效。（三）探討影響慢性下背痛患者疼痛程度、日常生活影響程度、柔軟度和背部肌力之相關因素。

本研究採準實驗法研究設計，針對慢性下背痛個案分配至運動訓練組或控制組，實際完成本研究之個案爲 47 人，運動組 24 人，控制組 23 人。研究資料的收集過程爲，前測先收集病患基本資料，並依序由病患自行塡答簡明疼痛量表與日常生活影響程度量表，並接受背部肌力與身體柔軟度測量，運動組接受每週三次，持續六週之規律腹背肌運動訓練，而控制組維持其日常活動。收案三週後，再約定個案進行第二次背部肌力測試，待六週結束後，再約定個案進行後測之簡明疼痛量表和日常生活影響程度量表與背肌力及身體柔軟度等測試。

個案的基本屬性進行描述性統計分析，包括：百分比、平均數、標準差。另外類別變項以 Chi-Square test、連續變項以 t-test，分別檢測兩組之間的同質性；另各組計劃前後，其下背疼痛程度、日常生活影響程度、柔軟度和背部肌力之變化，以 paired-t test 檢測是否有顯著差異；兩組間計劃前後，腹背肌力於下背疼痛程度、日常生活影響程度、柔軟度和背部肌力之變化，以 t-test 檢測是否有顯著差異；而探討慢性下背痛患者疼痛程度、日常生活影響程度、柔軟度和背部肌力之相關因素，則以 t-test 和 Pearson Correlation Analysis 檢測相關性。

研究結果發現：（一）本研究患者之坐姿體前彎平均值爲 21.51±10.29 公分，俯臥上體平均值爲 18.97±6.17 公分；背肌力值平均爲 88.27±31.10 公斤；個案一週內平均疼痛強度得分爲 4.44±1.28 分，最劇烈強度爲平均 6.81±1.81 分，且訪談當時疼痛強度爲平均 4.21±2.11 分。日常生活影響程度量表得分平均爲 12.55±5.06 分。（二）運動組經六週運動訓練後，其柔軟度中坐姿體前彎（$p<0.001$）、俯臥上體（$p<0.001$）、背部肌力（$p<0.001$）、疼痛嚴重度（$p<0.001$）與日常生活影響程度（$p<0.001$）均有顯著改善，而控制組於六週計劃後，其僅在疼痛最劇烈強度（$p<0.03$）與日常生活影響程度（$p<0.03$）有顯著的變化。（三）進一步比較分析兩組各變項的前後改變量，在提昇坐姿體前彎（$p<0.04$）與俯臥上體（$p<0.001$），背肌力的增加（$p<0.001$）及降低平均疼痛強度（$p<0.01$）與平均疼痛影響（$p<0.01$）與日常生活影響的改善程度（$p<0.01$），運動組均顯著優於控制組，且由疼痛強度的分析中，運動組在過去一週中無論最劇烈、最輕、一週之平均與訪談當時之疼痛強度，均有顯著的改善。（四）本研究男性患者之背肌力

量與俯臥上體等二項顯著高於女性，且男性之日常生活影響程度顯著低於女性患者；另年齡愈大之患者，其背肌力與俯臥上體愈差，且疼痛嚴重度與日常生活影響愈大；且身高愈高及體重愈重者之患者，其背肌力愈大而日常生活影響程度愈小，患者的柔軟度與疼痛嚴重度及日常生活影響程度間均無顯著相關性。
研究結果發現，六週的規律腹背肌運動訓練計劃，即能降低慢性下背疼痛患者之疼痛嚴重度與日常生活的影響程度，同時能改善患者身體的柔軟度及提昇背肌力量的有效方式，且更是患者能自主的參與和學習的保健與治療方案。

英文摘要

The purpose of this study were:
(1) To understanding the intensity of the pain, functional disability status, flexibility, and back muscle strength of chronic low back pain patients.
(2) To explore the effects of abdominal and back muscle exercise program on patients with chronic low back Pain.
(3) To test the relationships between pain severity, functional disability status, flexibility, and back muscle strength on patients with chronic low back pain.
This study utilized a quasi-experimental design. A total of 47 subjects who met the selection criteria were assigned to either the exercise group (n＝24) or control group (n＝23). The exercise programs were carried out three times per week for six weeks. The outcome indicators included Chinese version of the Brief Pain Inventory (BPI-C), Roland-Morris questionnaire(RMQ), and flexibility (include sit- and-reach and trunk lift test). These were measured at before and after the program test. The first back muscle strength was measured before the program test. The 2nd and 3rd back muscle strength were measured every three weeks during the program period.
Percentage, mean, standard deviation, Chi-Square test, t-test, Paired-t test, Repeated-measures of one sample dependant variable, Least-Significant-Difference, and Pearson correlation analysis were used for data analysis.
The results of this research were shown as bellow:
(1) The means score of pain intensity of subjects were 4.44±1.28 points, the means score of pain interference of subjects were 3.78 ±1.83 points, the means score of RMQ were 12.55±5.06 points, the sit-and-reach test of subjects were 21.51±10.29 cm, the trunk lift test of subjects were 18.97±6.17 cm, and back muscle strength of subjects were 88.27±31.10 kg.
(2) The flexibility, back muscle strength, the means score of the BPI-C, and RMQ were significantly improved in the exercise group. However, the means score of RMQ also significantly change in the control group.
(3) Both group compared the changes of measure variables, which were shown significantly difference in the exercise group.

(4) The relationship between back muscle strength and Trunk lift test and age were significantly positive correlation. But significantly negative correlation between age and pain severity and RMQ score. Height and weight of body were significantly positive to the back muscle strength, and significantly negative to the RMQ score. Pain severity and RMQ score were significantly positive correlation.
Base on the result of the study, its was concluded that abdominal and back muscle exercise did have benefit for patients with chronic low back pain.