

**EFFECT OF CERVICAL POSTURE CORRECTION
AND LUMBAR STABILIZATION EXERCISES ON
MECHANICAL LOW BACK PAIN**

Thesis

Submitted to Basic Science Department in Partial Fulfillment of
the Requirements for Doctoral Degree in Physical Therapy

By

ALIAA MOHAMED ALI ELABD

BSc Physical Therapy, October 6 University, Egypt (2008)

M.Sc. Physical Therapy, Cairo University, Egypt (2015)

SUPERVISORS

Prof. Dr.

Haytham Mohamed Elhafez

Dean, Faculty of Physical Therapy, Suez
University, Professor of Physical Therapy
Basic Science Department
Faculty of Physical Therapy
Cairo University, Egypt

Prof. Dr.

Ahmed Ibrahim Elerian

Assistant Professor of Physical
Therapy, Basic Science
Department, Faculty of Physical
Therapy,
Cairo University, Egypt

Prof. Dr.

Salah Eldin Bassit

Assistant Professor of Physical
Therapy, Basic Science Department,
Faculty of Physical Therapy, Cairo
University, Egypt

General Dr.

Ahmed Fathy Geneidy

Professor of Rheumatology,
Director of International Medical
Center, Egypt

Faculty of Physical Therapy
Cairo University, Egypt
2020

Effect of Cervical Posture Correction And Lumbar Stabilization Exercises on Mechanical Low Back Pain / **Aliaa M El-Abd**, Assistant Lecturer; Pharos University, Egypt; Supervisors: **Prof. Dr. Haytham M. Elhafez**, Dean of Faculty of Physical Therapy, Suez University, Egypt and Professor of Physical Therapy, Basic Science Department, Faculty of Physical Therapy, Cairo University, Egypt, **Prof. Dr. Ahmed I Elerian**, Assistant Professor of Physical Therapy and **Prof. Dr. Salah EB Ahmed**, Assistant Professor of Physical Therapy, Basic Science Department, Faculty of Physical Therapy, Cairo University, Egypt, and **General. Dr. Ahmed F Genidy**, Professor of Rehabilitation and Rheumatology, Director of International Medical Center; Doctoral Degree, (2020). (152 pages)

Abstract

Background: Although current lumbar stabilization exercises are beneficial for mechanical low back pain, further research is recommended focusing on normalizing global sagittal spinal alignment. **Purpose:** This study was conducted to examine the effects of adding cervical posture correction to lumbar stabilization exercises on mechanical low back pain. **Methods:** A randomized controlled clinical trial was conducted. Fifty adult patients of both genders with chronic mechanical low back pain and forward head posture were assigned into one of two groups to receive three sessions/week for 12 weeks treatment; group A: cervical posture correction and lumbar stabilization, and group B (control): lumbar stabilization. The primary outcome was back pain intensity level. Secondary outcomes included disability, craniovertebral angle, lumbopelvic alignment parameters (lumbar lordosis, sacral slope, pelvic tilt, and pelvic incidence), and sagittal lumbar intervertebral movements (translation and rotation). They were measured from lateral views X-ray. Reported data were analyzed by Two-ways-MANOVA. **Results:** MANOVA indicates significant effects. Pain, disability, lumbar lordosis, and sacral slope were significantly reduced in group A more than B ($p < 0.05$). Craniovertebral angle and pelvic tilt were increased in A more than B ($p < 0.05$). However, pelvic incidence and all other intervertebral movements revealed no significant differences ($p > 0.05$). Within-group-comparisons were significant for all variables in both groups except for pelvic incidence. **Conclusion:** Adding cervical posture correction to lumbar stabilization exercises for mechanical low back pain positively affect pain, disability, global sagittal spinal alignment. However, this combination has no better effects regarding segmental intervertebral movements than lumbar stabilization exercises.

Key words: Low back pain, Lumber stabilization exercises, Postural correction exercises, Sagittal spino-pelvic alignment.