

The comparison of effectiveness of muscles specific stabilization training and dynamic exercises on the chronic neck pain and disability

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Abstract

Background and Objective: Cervical stabilization training is a method of exercise which is designed to improve the mechanisms by which the cervical spine maintains a stable, injury-free state. The aim of this study was to compare effectiveness of muscle stabilization training with dynamic exercises on the chronic neck pain and disability.

Materials and Methods: In this double-blind clinical trial study twenty-six patients with chronic neck pain were recruited. Subjects were randomly assigned to either a stabilization (n=13) or a dynamic exercises group (n=13). Before and after intervention, pain was assessed with visual analog scale (ordinal) and Northwick Park Neck Pain Questionnaire (NPNPQ), disability (ordinal) with Neck Disability Index (NDI), neck muscles strength (bar) using Dynatest and cervical ranges of motion (degrees) with specific neck goniometer. A 24 session exercise program which lasted 12 weeks, two sessions per week, and 45 minutes per session was performed for both groups. Independent t-test or Mann-Whitney U and paired t-test or Wilcoxon were used for comparison between the pretreatment and post treatment test results between groups and within groups, respectively.

Results: The mean neck pain (NPNPQ) decreased from 18.23±0.77 to 7.54±4.39 in the stabilization group and from 18.31±3.99 to 11.85±3.89 in the dynamic group (P<0.05). The mean disability (NDI) decreased from 22.69±4.99 to 8.23±4.09 in the stabilization group and from 22.23±4.88 to 14.92±5.54 in the dynamic group (P<0.05). After treatment, neck muscles strength and range of extension increased and both neck pain and disability decreased in the stabilization group compared with the dynamic ones (P<0.05). However, there was no significant difference between two groups regarding flexors and left lateral flexors strength and ranges of flexion, right and left lateral flexion.

Conclusion: This study showed that neck specific stabilization and dynamic exercises increase, range of motion, decrease pain and disability. Also specific stabilization exercises was more useful than dynamic procedure.

Keywords: Chronic Neck Pain, Stabilization Exercise, Dynamic Exercise

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