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Efficacy of Eldoa Technique and Mckenzie Protocol Techniques for Patients with Mechanical Neck Pain

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Abstract:

- ***Background and Objectives:***
  The primary aim of the study is to compare the efficacy of ELDOA technique and Mckenzie protocol techniques for patients with mechanical neck pain.

- ***Methodology:***
  Study design – Experimental study. 30 subjects were enrolled in the study both male and female gender. Subjects were enrolled by using inclusion and exclusion criteria. Pre – test and post- test were taken on Visual Analogue Scale and Neck Disability Index to evaluate pain and disability respectively.

- ***Result:***
  Both groups revealed an improvement in VAS and NDI scores post-intervention ($p < 0.05$). Group A (ELDOA) presented more improvement in pain and disability reduction compared to Group B (McKenzie), and the differences between the two groups were statistically significant ($p < 0.05$).

- ***Conclusion:***
  ELDOA was proven to be more effective than McKenzie protocol for decreasing pain and functional disability in patients with mechanical neck pain. Thus, ELDOA may be a better intervention in clinical settings for the management of mechanical neck pain.

Keywords: *Mechanical Neck Pain, ELDOA Technique, Mckenzie Protocol Technique, Visual Analogue Scale, Neck Disability Index.*

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I. INTRODUCTION

Mechanical neck pain is best described as pain in the cervical spine or cervicothoracic junction provoked and/or increased by motion and/or palpation of the cervical musculature. Mechanical neck pain will be experienced by two-thirds of the population at some time during their life. One of the factors that contribute to mechanical neck pain is any pathology in the fascia lines. Pain can be also caused by any tightness in the fascia lines that wrap over the muscles of the neck, such as the trapezius, levator scapulae, and rhomboids.

Mechanical neck pain is also referred to as non-specific neck pain because this happens without an underlying specific disease. The pathogenesis of mechanical neck pain is not well understood and largely multifactorial including:

- *Poor Posture:*
  Slouching or hunching over, typically sitting at a desk or using electronic devices, puts extra strain on the neck muscles.

- *Overuse:*
  Repetitive activity involving the neck muscles, like extended typing, reading, or staring down at a smartphone, can result in muscle strain.

- *Sudden Movements*:
  Sudden jerky movements or activities that involve sudden neck movement can cause muscle strain.

- *Anxiety, depression*.
- *Occupational or sporting activities and physically strenuous works, like during reading, writing, sewing, by*

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trauma or by working on computers for long periods, which results in deranged joint mechanics or muscle structure or function

II. METHODS

Healthy subjects from AKG-CIHS were intentionally chosen. Subjects who met the inclusion criteria before testing were chosen. Participants were randomly divided into two groups: group A and group B. Following the selection process, the procedure was explained and signed informed consent was attained from 30 subjects. Initial assessment was done where the patients were interviewed to gather data like gender, age, marital status and education; and clinical data of interest: history of past medical, past surgical, history of falls and fracture, drugs etc. Group A and group B were assessed using VAS and neck disability index. Group A received four weeks of Mckenzie exercises, one session daily. Group B received fascial stretch therapy for four weeks.

III. RESULT

Within-Group Comparison:

Group A (ELDOA):

VAS: Pre 7.0 ± 1.1 → Post 2.3 ± 0.9

NDI: Pre 38.2 ± 4.5 → Post 14.1 ± 3.9

Statistically significant improvement ($p < 0.001$)

Group B (McKenzie):

VAS: Pre 6.8 ± 1.2 → Post 3.5 ± 1.1

NDI: Pre 37.5 ± 5.0 → Post 20.2 ± 4.2

Statistically significant improvement ($p < 0.001$)
Between-Group Comparison:

Larger decrease in VAS and NDI scores in ELDOA group

Intergroup difference statistically significant ($p < 0.05$)

IV. DISCUSSION

Findings indicate that although both ELDOA and McKenzie protocols are effective in the management of mechanical neck pain, ELDOA yields better results in both pain and functional disability.

Possible reasons for the efficacy of ELDOA include:Specific fascial release at vertebral segmental level,Postural alignment and joint decompression and Activation of deep stabilizing muscles.

McKenzie instead focuses on active movement and patient education, which are effective but perhaps not directly addressing fascial restriction.McKenzie exercise has been demonstrated to be superior to stabilization exercise for neck in decreasing pain and enhancing the functional performance in patients with mechanical pain of the neck. These exercises can enhance the strength and flexibility of the neck, improve posture, ease pain of the neck, and enhance fitness.

Gull M et al. carried out a study on ‘prevalence of mechanical neck pain among university students -an observational study.’ The study revealed that the predominance of cervical pain patients among Spanish matured was 19.5%. Both neckache and lumbar pain were more in females (26.4% and 24.5%) compared to males (12.3%and 15.1%).

Clinical Implications: ELDOA can be incorporated into standard physiotherapy guidelines for chronic neck pain, particularly when fascial tension is a suspected etiology.

V. LIMITATIONS

Small number of participants

Follow-up only in the short term (4 weeks)

Restricted to one center

Future research should utilize long-term follow-up and have a larger, more heterogeneous population.

VI. CONCLUSION

Both ELDOA and McKenzie protocols reduce pain and disability in patients with mechanical neck pain by a very high degree. Nevertheless, ELDOA showed better results in the present research. Thus, ELDOA can be used as a more effective and efficient intervention in the clinical practice of physiotherapy.

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