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Effectiveness of Proprioceptive Neuromuscular Facilitation Technique and Blackburn Exercises on Type 1 Scapular Dyskinesia in Recreational Badminton Players: A Non-Randomised Comparative Study

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Abstract

Background: Scapular dyskinesia, prevalent in overhead athletes, is the unbalanced movement of the scapula during upper limb motions. Type 1 scapular dyskinesia involves dorsal protrusion of the scapula's inferior angle. Blackburn exercises enhance scapular neuromuscular control and stability, while Proprioceptive Neuromuscular Facilitation (PNF) techniques improve neuromuscular function through controlled movement patterns.

Aim: To compare the effectiveness of PNF and Blackburn Exercises in alleviating pain and improving daily functional activities among recreational badminton players with type 1 scapular dyskinesia.

Method: Ninety recreational badminton players with type 1 scapular dyskinesia were split into two groups: Group A (n = 45) received blackburn exercises, and Group B (n = 45) received PNF therapy. Pre- and post-tests included NPRS, DASH, and lateral scapular slide test. Both groups were observed three days a week for four weeks.

Results: Both groups showed significant improvements in pain relief, scapular stability, and functional capacity ($p<0.005$). The PNF group outperformed the blackburn group in scapular stability and overall disability/symptoms.

Conclusion: Both blackburn and PNF therapies significantly improved pain, scapular stability, and functional impairments. However, the PNF group showed greater improvements in athletic performance and scapular stability.

Keywords: Blackburn Exercises; Proprioceptive Neuromuscular Facilitation Techniques; Recreational Badminton Players; Scapular Dyskinesia