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Eeffectiveness of Tibialis Posterior Versus Gluteus Medius Strengthening on Medial Longitudinal Arch and Balance Among Individuals with Flexible Flat Foot

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Abstract

Introduction: Flat foot, also called pes planus, is a postural deformity in which arches of the foot collapse, with the entire sole coming into complete or near complete with the ground. The arch provides an elastic spring connection between the forefoot and the hind foot so that most of the forces incurred during weight bearing on the foot can be dissipated before the force reaches the long bone of the leg.

Methods: 30 subjects with bilateral flat feet were assigned to Group A tibialis posterior (n=15) and Group B gluteus Medius (n=15). Subjects were selected from Chettinad Hospital and Research Institute, aged between 18-39, both genders, with flexible flat feet, BMI 18.5-24.9, and navicular drop test > 10mm.

Results: Results suggest that comparing the mean values of group A and group B on the navicular drop Test, GROUP-A shows (Right-12.00 & Left-11.40) lesser mean value that is more effective than GROUP-B (Right-15.20 & Left-15.20) at P≤0.001. On comparing the mean values of GROUP-A and GROUP-B on Star Excursion Balance test, Group A is effective than B in anterior (Right-71.67 & Left – 74.92), (Right-60.08 & Left-59.67); posterior (Right-65.82 & Left- 68.12), (Right – 56.18 & Left- 56.60); medial (Right-68.77 & Left-69.69), (Right-58.10 & Left – 57.69); lateral (Right-68.77 & Left-69.69) (Right-51.76 & Left- 55.23) at P≤0.001.

Conclusion: The results suggest that the tibialis posterior is more effective than the gluteus Medius strengthening in decreasing navicular drop and increasing dynamic balance in individuals with flexible flat feet.

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