

Bringing Tradition Back in Function; Using Ancient Form of Indian Footwear '*Paduka*' for Foot Muscle Strength and Balance Enhancement in Elderly: A Randomized Controlled Trial

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ABSTRACT

Objective: To study the effects of traditional Indian '*Paduka*' footwear versus barefoot based intervention on balance and foot muscle strength (FMS) in elderly.

Material And Method: 39 community-dwelling elderly with mean age 64.89 ± 3.97 were allocated into either group: A) experimental ('*Paduka*'), B) barefoot or C) control. One leg stand test for static balance, four square step tests for dynamic balance, timed up and go test, performance based best predictor of fall, was used. FMS was assessed using hand-held dynamometer and enhanced paper grip to further isolate intrinsic by a blinded assessor. Participants received intervention for the period of four weeks, 25 minutes per session for four days per week. Group A and B received same protocol with and without '*Paduka*' footwear respectively. Group C received no intervention. Intra-group analysis was done using 'matched-t' test and inter-group analysis was done using One-Way ANOVA with $\alpha \leq 0.05$ at 95% confidence interval.

Results: Analysis showed statistically significant improvement in strength ($p < 0.00$) and balance ($p < 0.00$) in both group A and B while improvement in TUG was seen only in group A, but not in B ($p = 0.25$). No improvements were observed in group C. Overall, group A was better than others in enhancing FMS and balance ($p < 0.05$).

Conclusion: While '*Paduka*' footwear and barefoot based exercise programs, both are effective in improving balance and FMS in elderly, using '*Paduka*' footwear offers higher benefits than barefoot training.

Keywords: Paduka, Balance, Elderly

