

***EFFECT OF COMBINATION OF PROPRIOCEPTIVE EXERCISE AND
POSTURAL STABILITY EXERCISE TOWARDS FUNCTIONAL BALANCE
IN PATIENTS WITH LOWER LIMB DIABETIC POLYNEUROPATHY***

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ABSTRACT

Diabetes mellitus (DM) is a heterogeneous group of disorders characterized by an increase in blood sugar or hyperglycemia due to insulin deficiency both absolute and relative. Diabetic neuropathy is one of the commonest and most important complication of diabetes mellitus type I or type II diabetes mellitus. The most common type of diabetic neuropathy is distal symmetrical polyneuropathy, which marked one of the symptoms is proprioceptive disorder. Proprioceptive disorders in lower limbs can lead to impaired postural stability in patients with diabetes mellitus, resulting in impaired functional balance.

Objective : To determine the effect of combination of proprioceptive exercise and postural stability exercise in improvement of the functional balance compared to those given postural stability exercises only

Methods : Double-blind study randomized controlled trial of 24 subjects analyzed data based on consecutive sampling studies that meet the inclusion and exclusion criteria to determine whether a combination of proprioceptive exercise and postural stability exercises can improve functional balance better than postural stability exercise only in patients with lower limb diabetic polyneuropathy, with simple randomization subjects were divided into 2 groups: group A (n = 12) were given postural stability exercises and a multi-station proprioceptive exercises and group B (n = 12) were given postural stability exercises only. Functional balance was calculated based on the FRT (functional reach test) and TUG (timed up and go test) post exercise at week 2, 4th and 6th.

Results : Statistical analysis showed significant difference between groups A and B at FRT2 (week 2) ($p = 0.031$) and FRT3 (week 4) ($p = 0.010$) and TUG3 (week 4) ($p = 0.029$) with $p \leq 0.05$.

Conclusion : Combination of postural stability and a multi-station proprioceptive exercises improve functional balance in patients with diabetic polyneuropathy better than postural stability exercises only.

Keywords: Diabetic Polyneuropathy, functional balance, postural stability exercise, multi-station proprioceptive exercise, functional reach test, timed up and go test.