Effect of Balance Enhanced Exercise Program (BEEP) on Balance, Balance Confidence, and Nerve Conduction in Patients with Diabetic Peripheral Neuropathy: A Randomized Control Trial

Sharvari Samant*, Dr. Preeti Gazbare (PT)

Dr. D. Y. Patil College Of Physiotherapy, Dr. D.Y.Patil Vidyapeeth, Pimpri, Pune – 411018

*Corresponding author

ABSTRACT

Background: Diabetes negatively affects the peripheral nerve function leading to postural instability by altering the balance. Long term effect of aerobic and strength training on balance is studied. The Balance Enhanced Exercise Program (BEEP) protocol emphasizes on all the systems affected in diabetic peripheral neuropathy (DPN) patients - musculoskeletal, somatosensory, vestibular and implementing this protocol on older adults has shown effect.

Methodology: An experimental study was conducted on 52 individuals with diabetic peripheral neuropathy (DPN), aged 40-65 years after institutional ethical approval. An informed consent was obtained then the individuals with Type 2 Diabetes Mellitus were screened for DPN using Michigan Neuropathy Screening Instrument Questionnaire (MNSI) and Berg Balance Scale (BBS). The outcome measures were Balance Master- limits of stability (LOS) and modified Clinical Test on Sensory Interaction of Balance (m-CTSIB), Activities Specific Balance Confidence Scale (ABC), Nerve Conduction Study-Latency, Amplitude, Velocity (NCV) and SF-36 Questionnaire.

Results: Normality of the data was checked by Shapiro-Wilk test, within group and between group analysis was done by paired t-test and independent t-test respectively. There was statistically significant difference between group A (experimental) and group B (control) with p<0.05 for LOS, m-CTSIB, ABC, NCS, SF-36 outcomes measures. Within group analysis showed statistically significant difference within Group A for all outcomes and in Group B for all outcomes except nerve conduction study with p>0.05.

Conclusion: The balance enhanced exercise program has a significant effect on balance, balance confidence and nerve conduction velocity in patients with diabetic peripheral neuropathy. Hence it can be implemented in the treatment of diabetic neuropathy patients.

Keywords: Diabetic peripheral neuropathy, Balance Master, Nerve Conduction Velocity, Activities Balance Confidence

