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ANALYSIS OF LOWER EXTREMITY MOTOR COORDINATION IN TYPE 2 DIABETES MELLITUS VERSUS NON-DIABETICS BY USING LOWER EXTREMITY MOTOR COORDINATION TEST (LEMOCOT).

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Background: Type 2 Diabetes Mellitus is a chronic metabolic disorder that affects neural and muscular function. Prolonged hyper glycemia leads to peripheral neuropathy and impaired proprioception, resulting in poor lower-limb coordination and balance. The LEMOCOT test is a simple and reliable tool to assess lower-extremity motor coordination.

Purpose: To compare lower extremity motor coordination between individuals with Type 2 Diabetes Mellitus and non-diabetic individuals using the Lower Extremity Motor Coordination Test (LEMOCOT).

Methods and Materials: A Comparative analytical study was conducted with 140 participants (70 diabetic and 70 non-diabetic) were selected by convenient sampling from Sri Venkateshwaraa Medical College Hospital and Research Centre and community areas. Coordination of both dominant and non-dominant legs was assessed using LEMOCOT. Data were analyzed with SPSS version 23 using frequency, percentage, and independent-sample t-test.

Results: The diabetic group showed lower mean LEMOCOT scores (28.60 ± 7.32 for the dominant leg and 26.47 ± 6.73 for the non-dominant leg) compared to the non-diabetic group (35.97 ± 4.15 and 33.95 ± 4.50. The mean difference was 7.37 for the dominant leg and 7.48 for the non-dominant leg, with a p-value of 0.001, indicating a significant difference. Among diabetics, 62 (88.6%) showed reduced coordination in the dominant leg and 67 (95.7%) in the non-dominant leg. Among non-diabetics, 49 (70%) had normal dominant-leg coordination and 44 (62.8%) had normal non-dominant-leg coordination.

Conclusion: Individuals with Type 2 Diabetes Mellitus exhibit significantly reduced lower-extremity motor coordination compared to non-diabetic individuals. Coordination deficits increase with age and longer diabetes duration. Early screening using LEMOCOT and physiotherapy interventions focusing on strengthening, balance, and coordination exercises are recommended to improve mobility and reduce fall risk.

Keywords: Type 2 Diabetes Mellitus, Lower Extremity Motor Coordination, Dominant leg, non-dominant leg, Coordination.