

Comparison of Physical Activity Level and Health Related Physical Fitness among Type 2 Diabetes Mellitus Patients in General Sir John Kotelawala Defence University Hospital: A Case Control Study

MADD Munasinghe^{1#}, LACK Thilakarathna¹, CJ Kalansooriya¹, MMPT Jayasekara², and HPM Dabare¹

¹Department of Physiotherapy, Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University, Sri Lanka

²Faculty of Medicine, General Sir John Kotelawala Defence University, Sri Lanka

dinukim18@gmail.com

This study compares health-related physical fitness (HRPF) and physical activity level (PAL) in adults with Type 2 Diabetes Mellitus (T2DM) and age-gender matched non-T2DM controls to understand their overall health status. A case-control study included 202 participants, with 101 T2DM patients and 101 controls. PAL was assessed using the international physical activity questionnaire. Under HRPF components, cardiorespiratory endurance (CRE) was measured using the six-minute-walk-test, flexibility by the sit-and-reach test, muscle strength/endurance via the 30-second-sit-to-stand test, and body composition through the body mass index (BMI). The statistical package for the social sciences version 25.0 was used for the data analysis. The mean age of the sample was 48.3±7.7 years. Cases and controls consisted of 54.5% and 60.4% females respectively. PAL is significantly lower among the T2DM patients compared to the healthy controls. (615.4 ± 523.3 vs 432.8 ± 373.8 Metabolic Equivalent - minutes, $p < 0.05$). CRE (386.8 ± 64.7m vs 445.2 ± 63.0m, $p < 0.05$), flexibility (14.2 ± 2.81cm vs 14.9 ± 2.3cm, $p < 0.05$), muscle strength and endurance (11.1 ± 2.5 reps/30s vs 13.0 ± 1.4 reps/30s, $p < 0.05$) were significantly lower among the T2DM patients compared to the controls. BMI was not significantly different in T2DM group compared to the controls (24.4 ± 2.9 kg/m² vs. 23.7 ± 2.2 kg/m², $p > 0.05$) T2DM patients demonstrated lower HRPF and PAL compared to age and gender -matched controls highlighting the importance of promoting HRPF and PA among T2DM patients.

Keywords: *type 2 diabetes mellitus, case control study, physical activity level, health related physical fitness*