Association between 30-S chair stand-up test and anthropometric values, vibration perception threshold, FHSQ, and 15-D in patients with type 2 diabetes mellitus

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Abstract
Background: Type 2 diabetes mellitus (T2DM) is a chronic, worldwide disease affecting more than 400 million people. This pathology involves several associated problems, such as diabetic neuropathy complications, obesity, and foot problems, both in terms of health and sensitivity. Objective: The objective of this study was to explore the relationships of the 30-s chair stand-up test with the Foot Health Status Questionnaire (FHSQ), the vibration perception threshold (VPT), and the 15-dimensional (15-D) questionnaire in T2DM people. Methodology: Ninety participants with T2DM were assessed in terms of fat mass percentage, VPT, foot health, health-related quality of life (HRQoL), and the 30-s chair stand-up test. Results: The 30-s chair stand-up test was found to exhibit a moderate relationship with “physical activity” (rho = 0.441; p ≤ 0.001) and “vigor” (rho = 0.443; p ≤ 0.001) from FHSQ. The 30-s chair stand-up test was also found to be weakly associated with foot pain (rho = 0.358; p = 0.001), 15-D total score (rho = 0.376; p ≤ 0.001), “sleeping” (rho = 0.371; p < 0.001), and “depression” (rho = 0.352; p = 0.001). Conclusions: The 30-s chair stand-up test is associated with “physical activity”, “vigor”, and “foot pain” from the FHSQ and the 15-D questionnaire total score and its dimensions “sleeping” and “depression” in type 2 diabetes mellitus patients. Therefore, following the results obtained, qualified clinicians can use the 30-s chair stand-up test as a good tool for monitoring and managing type 2 diabetes.

Author keywords
Body fat-mass percentage
Diabetes mellitus
Foot health
Health-related quality of life
Sensitivity threshold
Sit-to-stand test