

Abstract

Title: The assesment of selected strength and stability parameters of an ankle plantar and dorsal flexion in slackliners.

Objectives: To assess the relation between level of stability the dorsiflexion and the plantar flexion strength in slackliners.

Methods: The research sample was composed of two groups – slackliners (9 person) and balanced control group (9 person) selected from physically active population. Probandns were tested on the Flamingo test on the pressure plate, the test of the dorsiflexion and plantar flexion strenght on an isokinetic dynamometer. Slackliners underwent extra range of motions elements on the slackline. The level of stability was assessed by using the centre of pressure and the physical design of individual elements on the slackline. Power was assessed by using the peak torque at 30 ° and 120 °.

Results: Slackliners achieve bigger relative strength in the plantar angular velocity of rotation of 30 ° in both limbs than the control group (left: 1.51 ± 0.31 vs. 1.20 ± 0.30 Nm.kg⁻¹, $p < 0.05$, $\eta^2 = 0.21$, right: 1.55 ± 0.34 vs. 1.21 ± 0.34 Nm.kg⁻¹, $p < 0.05$, $\eta^2 = 0.22$). The results of other parameters (postural stability, isokinetic power at the ankle angular velocity of 120 °.s⁻¹ and the time course of force) between the two groups did not differ significantly.

Conclusion: Individuals used to walk on a slackline are characterized by significantly higher force during ankle plantar flexion than the physically active population. The postural stability or the time peak that developed between the groups did not differ significantly.

Keywords: slackline, stabilometry, isokinetic strength, dynamometry, stability