Abstract

Thesis title: Evaluation of postural stability and postural strategy in obese people

Objectives: The main objective was to evaluate postural stability using computer posturography in obese people and assess whether three-month exercise training with a focus on sensorimotor stimulation has an effect on postural stability.

Methods: This is a cross-sectional experimental study. The research group consisted of 20 probands aged 30 to 62 years with BMI values of 31.1–53.5 kg / m2, from which the general posturography was evaluated. The effect of sensorimotor training was subsequently assessed of 13 probands, who were divided into two groups – interventional (n = 6) and control (n = 7). The measurement was performed using static computer posturography and computer goniometry processed by the freeStep software system. To compare the effect of sensorimotor training, measurements were performed twice in the intervention and control groups, over a period of approximately three months. Postural stability was evaluated based on the Sway test. Statistical analysis was performed using IBM SPSS Statistics 24 software. Statistical significance was determined at the level of α = 0.05, the result where p <0.05 was considered statistically significant.

Results: General posturography in the research group showed a deviation of CoG in the anterior direction, as well as a statistically significantly impaired postural stability. After sensorimotor training, the position of the CoG in the intervention group was statistically significantly adjusted compared to the control group. The intervention group, compared to the control group, also noted an improvement in postural stability and an increase in range of motion in the lower limbs.

Conclusion: The results showed a statistically significant deterioration in postural stability in obese people, in which there was a statistically significant improvement after sensorimotor exercise.

Keywords: static posturography, computer goniometry, sensorimotor stimulation, Sway test, freeMed, MOOVER