

Abstract

Title: Evaluation of postural stability in modern dance dancers

Objectives: The aim of this Diploma thesis is to objectively evaluate and compare ability of dynamic and static postural stability between modern dancers (women only) and normal healthy population (women only), who don't do any sport activities on a regular basis. Another aim of this study is to evaluate whether the personal preferences of the standing lower limb, used in performing dance pirouettes, will affect the load on the lower limbs and it's stability, during testing static and dynamic postural stability.

Methods: This thesis is quantitative observational cross-sectional study involved 40 women between 18-29 years. Experimental group included women dancers (n1=20) and control group included women non-athletes from faculty (n2=20). For objective measure of postural stability was used NeruCom Smart EquiTest and following five measuring protocols: *Sensory Organization Test, Motor Control Test, Unilateral Stance Test, Limits of Stability a Weight Bearing Squat*. Results of measurement was statistically processed in Microsoft Excel 2016 for each group and then compared between groups. For statistical analysis was used: Shapiro-Wilk test, Student's T-test and Mann-Whitney U-test.

Results: A statistically significant difference was found between the groups only when Latency (MCT) parameter was evaluated. Dancers had significantly quicker reaction of left lower limb during forward shift of platform in medium speed than control group. Value of $p = 0,05$. Another statistically significant difference in favour of dancers was found when the overall average of the Latency parameter for all attempts, both sides of the body and both when moving the platform forward and backward was evaluated. Value of $p = 0,04$. Asymmetrical load of weight was found between lower limbs in both groups when WBS and MCT (Weight Symmetry parameter) was measured, in favour of left lower limb.

Keywords: modern dance, postural stability, posture, laterality, NeuroCom Smart Equi Test