Abstract:

Title:

Comparison of upper and lower quadrant stability using the Y-balance test in girls practicing sports aerobics

Aim:

The aim of this thesis is to identify the functional development of girls practicing sports aerobics at the elite level, to compare asymmetries and dynamic stability of the lower and upper quadrants using the Y-balance test across age groups. In addition to the main aim, the thesis monitored the prevalence of musculoskeletal disorders using a short anamnestic questionnaire and assessed the presence of hypermobility through the Beighton score. So, a secondary aim is to determine if and how these other aspects affect the dynamic stability of the girls.

Method:

A total of 44 girls aged between 8 and 25 years, covering all age categories of sports aerobics, participated in the study. The probands were selected from nine clubs in the Czech Republic and the research took place in the gyms of six of them. Measurements were taken during the competition season between February 2023 and October 2023. Data were collected by anamnestic questionnaire, Y-balance test and Beighton score. During this time period, the girls were measured a total of 3 times – at the beginning of the season, at the midpoint and towards the end. Data were entered into forms and then processed in Microsoft Excel and R software. Evaluation by analysis of variance (ANOVA), significance test (Tuckey), Chi-square test of independence, Spearman correlation coefficient and linear regression model according to the appropriate test. All statistical analysis tests were applied at 0,05 level of significance.

Results:

The results provide information on the variable composite score in the upper limbs both during the sport season and during adolescence, when the coefficient increased. The lower limbs then showed rather constant scores across age and stage of the year. Thus, it can be seen that the lower limbs maintain a consistent level of postural stability, whereas the upper limbs are highly influenced by training. Furthermore, I reached partial results according to the identified possible factors influencing postural stability.

Key words:

Y-balance test, postural control, hypermobility, postural function, early specialization, women's training, aerobic, Beighton score.