Abstract

Title: Relationship between human motor laterality and veering behavior in three different types of locomotion.

Objectives: The aim of this thesis was to verify relationship between side preference (handedness and footedness) and veering behaviour in walking, crawling and modified swimming without visual and auditory control.

Methods: The current research represents empirical quantitative research. Research sample consisted of 20 students from FTVS (n = 11) strongly right side preference, (n = 9) strongly left side preference. Performances form locomotion tests have been recorded and analysed with video software Dartfish. For data analysis was used, contingency tables, tetrachoric correlation and analysis of variance.

Results: Correlations between each type of locomotion and side preference computed for whole group of participants revealed significant relationship p<0.05 only between side preference and modified swimming test ($r_{tet} = 0.65$). In addition results revealed significant relationship p<0.05 between crawling and walking test ($r_{tet} = 0.68$) and between walking and modified swimming test ($r_{tet} = 0.49$). Furthermore, we also found significant relationship p<0.05 between crawling and walking test in left side preference sub-populations ($r_{tet} = 0.62$) and right side preference sub-populations ($r_{tet} = 0.58$). In contrast, relationship between walking and modified swimming test was significant only in left side preference subpopulation ($r_{tet} = 0.49$). Results of analysis between side preference and side of veering in all types of locomotion didn’t reveal any significant preferences. Analysis of veering behaviour in selected distances: 2m, 6m and 10m revealed significant deviations p<0.05 only in 10 meters distance after start between modified swimming test and remaining tests. Generally, we also observed larger deviations at female’s subpopulation and at left side preference subpopulation. However, in both cases these deviations were not statistically significant.

Keywords: veering behaviour, laterality, locomotion, walking, crawling, swimming