

Gökmen, Gülhan Yılmaz, et al. 2023 Abstract

Using EMG BF To Assess Motor Competence In Healthy Early Adolescents

Objective

The study aimed to retrospectively evaluate the fundamental motor competence of healthy early adolescents and to investigate the affecting factors with the assistance of **electromyography biofeedback (EMG BF)**.

Results

Compared by gender, there was a statistically significant difference in the right and left-hand placing of MMDT and 9-HPT. In comparison of the age groups, there was a statistically significant difference in the left-hand placing and turning subtests of MMDT and left grip strength. In a correlation analyses, age had a correlation with the left-hand placing of MMDT and left grip strength. Height and weight had a correlation with dynamic balance. Weight and BMI had a correlation with static balance.

Manual dexterity and hand grip strength develop with age in children, and girls' manual and finger dexterities are better than boys. While the increase in BMI and weight affect static balance negatively, the increase in height and weight affect dynamic balance positively. The researchers concluded that investigating the factors affecting motor competence can be important in evaluating the development of children and directing them to appropriate sports.

Participants and Researchers

The study included 89 children with an average age of 11.

The researchers were all from Bandırma Onyedi Eylül University, Faculty of Health Sciences, Department of Physiotherapy and Rehabilitation, Balıkesir/Bandırma, Turkey. They were: *Gulhan Yilmaz Gokmen, Fatma Nur Yilmaz, Esra Keskin, Sule Kecelioglu, and Ebru Kaya Mutlu.*

Methods

The children underwent several tests including Manual Dexterity Test (MMDT) for manual dexterity, 9-Hole Peg Test (9-HPT) for finger dexterity, a core balance test for balance, manual muscle strength measurement device for quadriceps muscle strength, hand dynamometer for hand grip strength. **EMG Biofeedback** for muscle activation was applied using the **NeuroTrac ETS MyoPlus Pro2** device (Verity Medical), which was also used for **EMG Biofeedback** assessment.

The full abstract can be found at <https://dergipark.org.tr/tr/download/article-file/3510837>.