International Journal of Physical Activity and Health

Volume 2
Issue 1 *Supplemental Issue: Abstracts of 2022 International Chinese Society for Physical Activities and Health*

Article 26

2-2023

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Abstract

The purpose of this study was to examine the relationship between fundamental motor skills (FMS) and physical fitness (PF) in children aged 7-12 years. The participants were 217 children (50.7% female) from a primary school in Shanghai. The FMS was assessed using Chinese version Test of Gross Motor Development–3 edition (CTGMD-3), which includes 6 locomotor skills and 7 ball skills. PF was measured following China's national physical health standards for students, which includes BMI, vital capacity, sit and reach, 50m sprint, one-minute rope jumping, one-minute sit-ups and 50m * 8 shuttle run. The weighted score of the 7 tests was calculated to represent the performance of PF. Four participants were assigned into one group and took all tests within a physical education class. Two well-trained graduate assistants performed the tests within one month. Descriptive statistics were computed after checking the normality of the scores of CTGMD-3 and PF. Pearson correlation was used to determine the relationship between FMS and PF. The significance level was set at 0.05. The results showed a significantly positive correlation between the CTGMD-3 score and PF score ($r = 0.166$, $p = 0.014$). There was a significantly positive correlation between the score of locomotor skills and PF scores ($r = 0.269$, $p < 0.01$). No significant correlation between the score of ball skills and PF score ($r = 0.065$, $p = 0.338$) was found. It is concluded that FMS, especially locomotor skills, was associated with PF among children aged 7-12 years. The generalizability of this study was limited since the participants were from one primary school in Shanghai. The small sample size might limit the power of this study. Future research is needed to explore the mechanism underlying the relationship between FMS and PF.

Keywords: fundamental motor skills, physical fitness, BMI, locomotor skills