

# **MOTOR PERFORMANCE'S LEVEL LINKS WITH FUNDAMENTAL MOVEMENT SKILL'S PROFICIENCY IN PREADOLESCENCE NON-OBESE CHILDREN**

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## **Introduction**

As same as learning and distinguishing letters for acquiring writing skills, fundamental movement skills (FMS) are the constructive-building blocks for more multifaceted motor skills and more complex movement patterns. Hence, FMS proficiency epitomize the essential performance competency and subjective experiences required for participation in many forms of physical activity throughout the physically active lifespan. In addition, FMS proficiency is accompanying with numerous health benefits, as well as higher levels of fitness, reduced risk of many NCD including overweight and obesity, and higher perceived competency (Hume et al. 2008, Foweather 2010). On the other hand, the association between FMS and motor performance in children is mentioned in limited researches; nonetheless, in the last two decades, description and multidimensional examination of children FMS became well documented. These progressive growing bodies of researches are being in concurrence with the main idea, which supports the conception that children do not learn or master FMS naturally; therefor FMS must be systematically taught and nurtured (Clarke 2007). The most appropriate place to teach and master FMS is schools; in particular, preschool institutions and elementary schools where children receive their foremost part of conceptualizations and skills needed for upcoming future tasks. Moreover, the convenient main place where children and adolescents are assured of devising, discovering and experiencing for learning and mastering FMS is the PE classes (Othman et al. 2001; Whitehead 2013). The aim of the present study was to investigate the proficiency of 10-11 years old Egyptian and Hungarian children's locomotor FMS represented by sprint running, jumping for distance and overhand throwing. In addition, our purpose was to describe and compare the FMS's mastery related motor performance of children in Hungary and Egypt.

## **Subjects and Methods**

Our sample is consisted of 634 healthy school boys aged 10-11 years. 308 of them are Egyptian and 326 are Hungarian. However, those children who were overweight or obese ( $BMI \geq 25$ ) have excluded from the statistical analysis in both countries. Three FMS (sprint running, jumping for distance and overhand throwing) were assessed using modified protocol (NSW Department of Education and Training 2000). On the contrary, the three motor tests (30 m run, standing long jump and standard fistball throwing) were performed in consistency with the available schools sets and in conformation with the athletic rules. After calculating the means and standard deviations of the studied parameters, the differences between the means of the same age groups were calculated by t-test for independent samples. Differences of the means of the samples of different age groups were calculated by variance analysis followed by F-test.

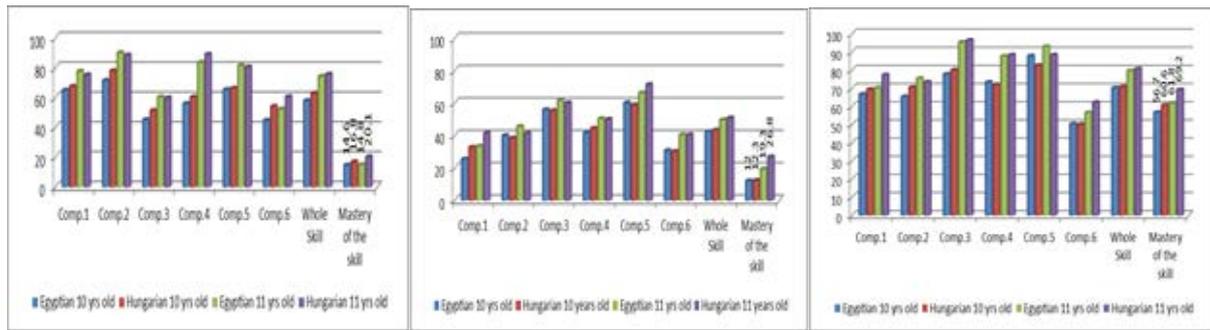
## **Results**

Our results (Figure 1,2,3)) indicate alarming poor proficiency of FMS's components and very low mastery percentage of the three FMS. However, in some components the subjective score does not exceed 30.7% (component 6 of jumping for distance for 10 years old boys: Balanced landing with no more than one step in any direction) but others have reached 96.4% (component 3 of overhand throwing for 11 years old boys: Throwing arm nearly straightened behind the body). The whole skill's mastery percentage also indicate worrying provocative process. Scores of FMS skills showed a very low percentage of children who have relatively mastered the skill. Definitely, the percentage was under 27% of all skill (12%-26.8%). The only exception was the overhand throwing in where the percentage exceeds 75% for 11 years old boys. Descriptive and comparative statistics for the motor performances (30 m run, standing long jump and fistball throwing) are summarized in Table 1.

Figure 1: Sprint running

Figure 2: Jumping for distance

Figure 3: Overhand throwing



30 m sprint running (s)					
Decimal age	Egyptians		Hungarians		P
	Mean	SD	Mean	SD	
9.51 - 10.50	5.99	1.00	6.11	0.77	NS
10.51 – 11.50	5.89	0.87	5.97	0.78	NS
P	NS		NS		
Jumping for distance (cm)					
9.51 - 10.50	158.99	22.36	157.18	21.68	NS
10.51 – 11.50	164.01	16.14	161.30	21.16	NS
P	NS		NS		
Overhand throwing (m)					
9.51 - 10.50	25.78	5.99	24.90	5.66	NS
10.51 – 11.50	28.98	6.03	27.96	6.02	NS
P	<5%		<5%		

Comparing the resent study results with those published by many researchers (Measaros et al. 2001, Othman et al.2001), we can stress that our samples showed very weak scores. Additionally, no significant interrace differences were observed in all the three motor tests. The age dependency differences were also non-significant except for the

fistball throwing motor test where the differences between the two age groups in both countries were significant at 5% level of random error.

### Conclusion

Low FMS proficiency is one of the causal factors of weak scores of motor performance in preadolescent children, even those who are non-obese. At the same time, low FMS proficiency may attribute to absence of the quality physical education's learning-teaching process.

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