

## حق الطفل في الصحة البدنية والرشاقة مكفول في المعاهدات العالمية: المهارات الحركية الأساسية والأداء الحركي لأطفال المدارس غير البدنيين من سن 10-11 سنة في جنوب سوريا: دراسة وصفية- تحليلية بين الريف والمدينة

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### الملخص

أحد أهم معاهدات الأمم المتحدة معاهدة الحفاظ على الطفولة وحقوقها بحيث تنص في قوانينها على أن لكل طفل الحق في الصحة البدنية. هدفت الدراسة إلى استكشاف إتقان المهارات الحركية الأساسية لأطفال المدارس الذكور غير البدنيين من عمر 10-11 سنة، وأيضاً لمقارنة النتائج مع القدرات البدنية المرتبطة بها. اشتملت عينة الدراسة على 634 طالب مدرسي، منهم 308 من مدينة درعا و328 من ريف محافظة درعا. تم تقدير مستوى إتقان المهارات الحركية بناءً على جداول مُعدة لهذا الغرض، وتم قياس القدرات البدنية بأخذ قوانين ألعاب القوى بالحسبان. خلصت الدراسة بنتائج مفادها أن مستوى إتقان عناصر المهارات الحركية كان متدنياً جداً حيث كان مستوى إتقان بعض عناصر المهارات الحركية الأساسية أقل من 10%، بينما كان في العنصر الرابع لمهارة الرمي من الأعلى 67.31%. من جهة أخرى، كان مستوى إتقان المهارات الحركية أقل من 50% (18.892%-49.812%). كان الاستثناء في مهارة الرمي من الأعلى حيث

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كانت النسبة المئوية لإتقان المهارة قريباً من 50% (49.812% للأطفال من سن 11 سنة). بالنسبة للاختبارات الحركية، لم يوجد فروقات ذات دلالة لكن في اختبار رمي المرة من الأعلى كانت الفروقات بين الفئات العمرية بنفس العينة ذات دلالة عند 5% من الخطأ العشوائي. يمكن إرجاع الدرجة المقلقة لضعف مستوى إتقان المهارات الحركية الأساسية والنتائج الضعيفة للاختبارات الحركية المرتبطة بها، إلى غياب المعنى الفعلي للتدريس والتدريب. الأمكنة الأكثر ملائمة للتدريس الفعلي للمهارات الحركية الأساسية هي المدارس ودروس التربية البدنية والأنشطة البدنية والألعاب الرياضية خارج المدرسة.

**الكلمات المفتاحية:** المهارات الحركية الأساسية، الأداء الحركي، مقارنة، مدينة،

ريف.

## **Child's Right to Physical Health and Fitness is Ensured by International Conventions: Fundamental Movement skills and performance of 10-11 Years' Non-obese School Boys in South Syria: Urban-Rural Descriptive-Comparative Study**

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### **Abstract**

Of the most significant UN conventions is the convention of child's rights, where paragraph clearly states that every child has the right to be physically healthy. The aim of this study was to investigate the Fundamental Movement Skills (FMS) proficiency of 10-11 years' non-obese school-boys. It Also aimed to compare the interrelated motor performance of the participated boys. The ample consisted of a total of 634 school-boys aged 10-11 years. 308 live in Daraa city and 326 live in rural communities in Daraa governorate. Skill proficiency was estimated according to validated check-list tables and the motor performance tests were measured taking into consideration the athletic rules. There was an alarming low proficiency of FMS's components. The proficiency percentage in some components was below 10%, while in component four of the overhand throwing skill was 67.31%. On the other hand, the whole skill mastery percentages were less than 50% (18.892%-49.812%). The exception was the overhand throwing skill where the mastery percentage was close to 50% (49.812% for 11 years old boys). Regarding motor tests, no significant differences were detected in motor performances. Nevertheless, in fistball throwing, the differences between age groups of the same sample were significant at 5% level of random

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error. The alarming low mastery of FMS and the weak results of related motor tests can be attributed to the absence of the meaningful FMS teaching and practice. The most appropriate places for meaningful teaching are schools and physical education lessons and after school physical activities and sport games.

**Keywords:** FMS, mastery, motor performance, comparison, urban, rural.

## Introduction

UN conventions define child as every human being below the age of eighteen years. Furthermore, they declare that every child has the inherent right to life (article 6, part1), and governments must ensure the maximum extent possible to survival and development of the child (article 1, part 2). In addition, article 24 recognizes the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health they also stress the right of children to have access to such health care services.

Despite the progressive tendency of related scientific research, lack of children's fundamental movement skills (FMS) had been reported by few research and manuscript only. Furthermore, comparative studies among different groups living in diverse environments or even between diverse ethnic groups are rare and not often made (Bryant et al. 2014, Chan et al. 2016). This maybe because of the high cost of expenses, the exalted ability of researchers to be convenient to different traditions and appropriate correspondence to various unexpected circumstances, and the excessive implementations needed to complete such researches (Mahmoud et al. 2002). On the other hand, the motor skills and motor performance of children living in the same region are well-documented in the interrelated literature, especially in older children and adolescents. Even though, FMS are the decisive building blocks for featured daily life activities and for more advanced movements and sports skills (McKenzie et al. 2002, Chan et al. 2016). In addition, fundamental movement skills are basic abilities and skills of a child to perform an organized series of basic movements that involve various body parts and provide the basis of achieving a high level of motor competence to develop normally, maintain health, and gain athletic excellence, Fundamental movement skills are very important in the physical development and growth of a child, or in general, the physical health of the child.

However, the physical health of children is protected by international conventions and definitive law paragraphs also. The Syrian government has signed the convention on the right of the child on 20 November 1989 and its entry into force in second September 990 in accordance with article 49. This includes the right of children to be taught every fundamental skill needed for safe and enjoyable life.

The insufficiency of FMS proficiency and the vulnerability of motor performance results of children are not a contemporary theme. Statements and insinuations to low level of health status and poor physical performance of children can be comprehended in published researches that belonged in-time to the beginning of the twentieth century (Leonard 1915, Sherly 1931). These progressive growing corpora of evidences 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 (Lemos et al. 2012, 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 and responsibilities.

### **Study objectives**

The significance of the present study may have been traced back to the life necessity values of FMS, which are indispensable for normal daily life and for proficient daily activities (Bryant et al. 2014). Yet, countless studies have stated that children's FMS and physical performance levels show progressive decline curve in year-to-year observations (Lawrence 2010). This, may be due to the technical development and shifting process where children transfer their daily activities from natural environment to artificial one. However, several investigations have presented results regarding children performance according to their demographic, social, health and economical status. Some have acknowledged better FMS levels and performance for urban children, but others have published conflicting results (Othman 2001).

The aim of the present study was to explore the proficiency of locomotor FMS represented by sprint running, jumping for distance and overhand throwing of non-obese 10-11 years old children living in urban and in rural communities in south Syria. It also aimed to compare the studied variables and the related motor performance between children.

### **Methods and subjects**

The sample consisted of a total of 634 school-boys aged 10-11 years. 308 of them are living in urban communities in Daraa city, and 326 are living in urban communities from several small villages in Daraa governorate (table 1). According to the respective paragraphs of Helsinki Declaration, all the investigated children and adolescents were healthy,

volunteer, and no injuries or illnesses were observed before the data collection. However, those children who were overweight or obese (body mass index  $\geq 25$ ) had been excluded from the statistical analysis in both samples. Since, the age period investigated in the current research is sensitive, and for originating exact age groups, the children's calendar age was transformed into decimal system. The decimal age-range was exactly one year in each age group, between 9.51-10.50 and 10.51-11.50 for ten years old and eleven years old boys respectively.

**Table1: Frequency distribution of studied subjects by chronological age.**

Decimal age	Rural children	Urban children
9.51 - 10.50	161	153
10.51 – 11.50	165	155
Sum	326	308
All	634	

### Study design and measures

The qualitative assessment of the proficiency of the three locomotor fundamental movement skills presented in the current research was derived and constructed from different methodological aspects presented in various researches and manuscripts (NSW 2000, van Beurden et al. 2002, WAG 2004, DECCD 2006,). The constructed assessment methodology has been formatted in correspondence with the aims and the possibilities. Opportunities were obtainable during the period of achievement of the recent research. Whatever, the assessment -which is based on a check-list tables contained the six components of each skill- was carried out by qualified researchers and local physical educators (everyone was responsible for only one component of the skill). Every skill was divided into six components (Table 2) and the implementation of each component was evaluated separately by grades from one to ten. Once grades were transformed to percentages, one equal to 10% and ten equals to 100% (WAG 2004). The evaluation of the whole skill was estimated by the average performance of its components. On the contrary the three motor tests (30 mins run, standing, long jump and standard fistball throwing) were performed in consistency with the available

school's sets and in conformation with the athletic rules. After typical skill presentation, children were asked to perform the skill by their maximum effort and from three attempts, the best one was recorded.

**Table 2: The six components of investigated locomotor skills**

Component	Sprint running	Jumping for distance	Overhand throwing
1	Lands on ball of the foot	Eyes focused forwards throughout the jump	Eyes focused on target area throughout the throw
2	Non-support knee bends at least 90 degrees during recovery phase	Crouch with knees bent and arms behind the body	Stands side-on to target area
3	High knee lift (thigh almost parallel to the ground)	Forceful forward and upward swing of the arms	Throwing arm moves in a downward and backward arc
4	Head and trunk stable, eyes focused forward	Forceful legs push in time with arms swing and in coordinated movement	Steps towards target area with foot opposite throwing arm
5	Elbows bent at 90 degrees	Lands on balls of the feet and bends knee to absorb landing	Hips then shoulders rotate forward
6	Arms drive forward and back in opposition to the legs	Controlled landing with no more than one step in any direction	Throwing arm follows through, down and across the body.

### Terminology

Fundamental Movement Skills (FMS): a specific set of skills that involve using different parts of the child's body and form the "building blocks" for more complex and specialized skills, they will need throughout their lives.

Locomotor skills: activities that move children from one place to the next one (locomotion), including running, throwing, jumping hopping and skipping.



Physical health: the state of the functioning organism that qualify it to perform different daily activities effectively and without injuries.

Fitness: abilities such as strength, speed and endurance, which are the basics for performing specific physical activities, sport games and/or daily tasks with little or no fatigue (Clark 2007; p. 39-44, NSW 2000).

#### Statistical analysis

Statistical analysis was performed via Statsoft Statistical program version 7 (Statsoft 7.0). After calculating the means, percentages and standard deviations of the studied parameters, the differences between means of the same age groups were calculated by t-test for independent samples. The comparisons between the mastery of FMS were performed by applying Chi square. The significant level was set on 0.05.

#### Results

Figures 1-3 represent the percentage of 10-11 years old children in both samples who have -subjectively- mastered the fundamental skills presented in this research (sprint running, jumping for distance and overhand throwing). Additionally, figures comprise the percentages of the proficiency of the six components of each skill. Generally, the results indicated alarming poor proficiency of FMS's components and very low mastery percentage of the three FMS. Nevertheless, in some components the subjective score does not exceed 9.26% (component 6 of jumping for distance for 11 years old urban boys: controlled landing with no more than one step in any direction) but - providentially - other components have reached 67.31% (component 3 of overhand throwing for 11 years old rural boys: throwing arm moves in a downward and backward arc). The whole skill's mastery percentage also indicates a worrying provocative process. According to the related literature, the investigated three FMS -commonly- tend to be mastered before the age of 9 years (NSW 2000, Lawrence 2010). Despite this fact, the results of the current study revealed that the subjective scores of the three FMS display a very low mastery percentage. The percentage was less than 50% of all skills (18.892%-49.812%). The only exception was the overhand throwing where the percentage was fairly close to 50% (49.812) for 11 years old rural boys.

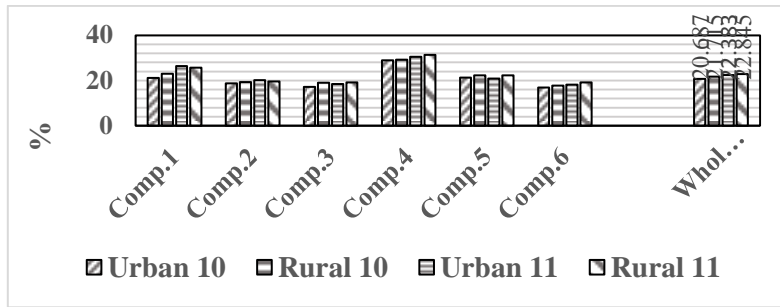


Figure 1. Mastery percentages of sprint running FMS and its components for 10-11 years old boys in both samples.

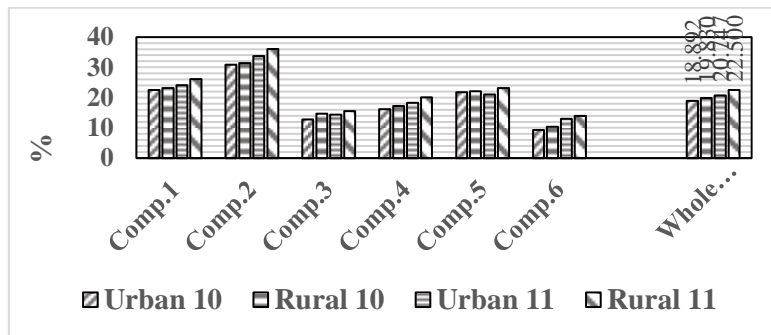


Figure 2. Mastery percentages of jumping for distance FMS and its components for 10-11 years old boys in both samples.

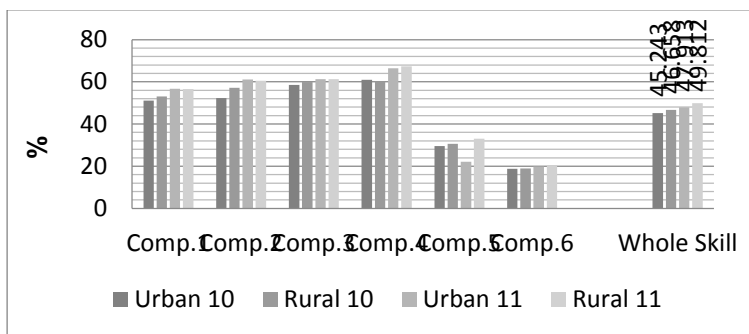


Figure 3. Mastery percentages of overhand throwing FMS and its components for 10-11 years old boys in both samples.

Descriptive and comparative statistics for the motor performances (30 m run, standing long jump and fistball throwing) are summarized in Table 3. No significant differences were detected in all of 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 samples were significant at 5% level of random error. This result can be explained by the studied sensitive age stage, where developmental processes take place, specifically the growth of body mass and consequently the improvement of the ability of strength.

**Table 3: Descriptive and comparative statistics of the three motor tests**

30 m sprint running (seconds)					
Decimal age	Rural		Urban		t value (p value)
	Mean	SD	Mean	SD	
9.51 - 10.50	5.99	1.00	6.11	1.01	1.057 (0.2911)
10.51 - 11.50	5.89	0.87	5.97	0.92	0.798 (0.4254)
t value (p value)	0.937 (0.3497)		1.309 (0.1915)		---
Jumping for distance (centimeter)					
9.51 - 10.50	159.99	22.36	157.18	21.68	1.131 (0.2591)
10.51 - 11.50	164.01	16.14	161.30	21.16	1.282 (0.2007)
t value (p value)	1.811 (0.0711)		1.736 (0.0834)		---
Overhand throwing (meter)					
9.51 - 10.50	25.78	5.99	24.90	5.66	0.183 (0.8553)
10.51 - 11.50	28.98	6.03	27.96	6.02	1.514 (0.1311)
t value (p value)	4.672 (0.0001)*		4.678 (0.0001)*		---

Abbreviations: SD: standard deviation; \*: significant at 5% level of random error.

### **Discussion and conclusions**

The recent study found that the proficiency percentage of the components of sprint running FMS was low and ranged between 16.88%-28.69% for urban and 17.68%-29.24% for rural 10 years old boys. For the eleven years old age group the range of proficiency percentage was 18.12%-30.48% and 19.17%-31.45% for urban and rural boys respectively. The proficiency percentages of the skill components appear to have high scores values, but when interconnected to each other to form the whole coordinated skill, then the results were descendent in alarming rates.

The proficiency of the whole skill does not exceed 22.383% in urban and 22.845% in rural samples. This may be the strongest indicator that we choose the human eye as a method to evaluate the proficiency of the FMS skills and its components far away from logical but non-human dependent computer methods and evaluative softwares. However, our findings related to proficiency percentages are similar to those published by van Beurden et al. (2002). Nevertheless, the recent research values are lower than values presented by Hardy et al. (2010) in the SPANS report, where the mastery percentage was less than 40%, but higher than the results showed by the report of Liverpool John Moores University (Lawrence 2010) where the prevalence of proficiency was 8% only.

Generally, the mastery of skill's six components in both countries and for both age groups are analogous with some inconsiderable differences observed in one or two components. Yet, the results of interrelated motor test performance (30 m run) consolidated the prevalence of low proficiency percentages in both samples and for both age groups. The statistical analysis revealed that both, the differences in the same age group and similarly the differences between age groups are not significant.

In addition, the scores of both age groups are weaker than the representative data published by Eiben, Barabas and Panto (1991) with significantly slighter standard deviations around the respective means. On the other hand, Mahmoud (2001) had published similar mean performance results for Egyptian samples of the same age range, but the results of Georgiou et al. (2002) were significantly better for Cypriot counterparts.

Likewise, the same tendency can be mentioned in jumping for distance skill. The attention-grabbing was the low scores even in every skill component comparing with the previous one. This becomes manifested when the components scores are declared, specially the third (Forceful forward and upward swing of the arms) and sixth components (controlled landing with no more than one-step in any direction). In the third component, the proficiency percentages were 12.75% and 14.71% for 10 years urban and rural boys correspondingly. For 11 years old age group the proficiency percentage scores were 14.34% and 15.59% for urban and rural boys respectively. For sixth component, the proficiency was 9.26%-10.34% for 10 years old and 12.99%-14.01% for 11 years old urban and rural boys consistently. Additionally, the overall coordinated skill proficiency percentage does not exceed 19.830% for 10 years old boys and 22.50% for 11 years old boys.

Similar to 10 years' age group in 30 m running, in jumping for distance also no significant differences were found between age groups or between urban-rural boys. This result may be explained by the notion sustained by several authors (Gallahue 2011, Philip and Harry 2018), that jumping for distance skill (as all other skills) does not develop naturally. Furthermore, proper knowledge and appropriate multifaceted practice are essential for the development and improvement of the maturity of many skills such as jumping for distance.

Contrary to the previous skills performance percentages, the proficiency of overhand throwing skill was surprisingly advanced in both samples and for both age groups. Even though that the results are still lower than published data in several research and reports (van Beurden et al. 2002, Hardy et al. 2010). The only anomalous component was the sixth one (throwing arm follows through down and across the body) where the proficiency percentage was 18.82% and 18.95% for ten years and 19.89% and 20.27% for 11 years old urban and rural boys respectively. Consequently, the improved proficiency of the skill components led to higher percentage of the whole skill proficiency.

Certainly, the whole skill proficiency percentages were between 45.243% and 49.812% for both groups. In contrast, there were no significant differences in fistball throwing between same age group. Nonetheless, the differences between age groups were significant at 5% level of random error.

In general, we can conclude that the distinctive mean performance of the samples of the recent research can be evaluated as debilitating consistently. That, by comparing our results to those boys and adolescents of the same calendar age of Egyptians presented by Mahmoud (2001) Cypriots published by Georgiou et al. (2002) and Hungarians issued by Mészáros, Othman and Szabó (2001) we can observe a tendency of inadequate levels of FMS and related motor performances. For instance, the means of our best performers in fistball throwing are consistently shorter by 1.5-3.0 m.

Since both the individual and mean performances depend on the coordination in this level of motor skills, the observed delay must be attributed to the lack of necessary and appropriate teaching and practice. Furthermore, the announcement of low motor performances and inadequate levels of FMS is valid for all children irrespective of their residency. Table 4 supports this announcement when comparative statistics have been done between urban and rural boys regarding their mastery of FMS. Table 4 indicates that, there were no significance differences between the level of mastery of the investigated three FMS of urban and rural boys.

**Table 4: comparative statistics of FMS mastery level between urban and rural school boys**

Sprint running				
Age group	N	Mean	Chi square	p value
Urban 10 yrs.	153	20.687	0.0494	0.8240
Rural 10 yrs.	161	21.715		
Urban 11 yrs.	155	22.383	0.00972	0.9215
Rural 11 yrs.	165	22.845		
Jumping for distance				
Urban 10 yrs.	153	18.892	0.0440	0.8338
Rural 10 yrs.	161	19.830		
Urban 11 yrs.	155	20.747	0.144	0.7040
Rural 11 yrs.	165	22.500		
Overhand throw				
Urban 10 yrs.	153	45.243	0.0630	0.8018
Rural 10 yrs.	161	46.658		
Urban 11 yrs.	155	47.913	0.115	0.7345
Rural 11 yrs.	165	49.812		

Table 4 demonstrates that despite the low mastery level of FMS for both groups and the slightly better mastery level of rural boys, but there were no significant differences between rural and urban boys of the same age group in FMS mastery level. The identical minor improvement of mastery level with age can be indicated by the physiologic facts related to natural growth and development of the children, but not to the progressive process of mastering FMS.

According to Mahmoud et al. (2001) and Lemos et al. (2012) the most appropriate places for meaningful teaching and mastering FMS and additional skills are schools and physical education lessons. In addition, physical activities and different sport games outside schools such as gardens, fields and clubs are also playing a crucial role in mastering FMS and other daily life skills. This may become more actual and applicable when different governments ensure the rights of children by continuous follow-up acts.

#### **Suggestions**

- Similar to western curricular processes, FMS must be a part of school curriculum with special attention to precise practicing and accurate executions of technique elements.
- Schools' programs must contain appropriate interventions for motivating children to practice FMS and play activities out of school's hours.
- Planning instructions for decreasing technical tools usage time and replacing it by movement activities.
- Regular evaluations of children FMS and performance levels may be advisable throughout the school year.
- According to international standards, special FMS programs are needed for those children who have lower level of FMS and for those who have some kind of disability.

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