

## THE RESULTS DYNAMICS FOR THE LITTLE GIRLS' SPRINT EVENTS IN THE NATIONAL TRACK AND FIELD CHAMPIONSHIP - INDOOR

RAȚĂ BOGDAN CONSTANTIN<sup>1</sup>, RAȚĂ GLORIA<sup>1</sup>, ALEXE DAN IULIAN<sup>1</sup>, RAȚĂ MARINELA<sup>1</sup>, SAVA ADRIAN<sup>2</sup>

### Abstract

**Objectives:** This study aimed to emphasize the dynamics of time and movement speed during the 60 m – little girls I, 50 m – little girls II, and 40 m – little girls III events.

**Material and methods:** In order to underline the results during the qualifications and finals, we used as research methods: the study of the specialized literature, the observation, the electronic recording, the statistical-mathematical method and the chart method. The results were recorded using the Alge Timing Optic 2 electronic timing system, made by the Alge Timing Company. 24 subjects participated in this research (8 little girls I, 8 little girls II, 8 little girls III). *The hypotheses* started from the belief that the time and the movement speed have small oscillations between the qualifications and the finals races, and that most little girls run better in the final race than during qualifications.

The recorded and analyzed **results** emphasize the manifestation of the movement speed in the three age categories during the short sprint events conducted in the winter competition season. The results prove that in nearly all cases the children cannot improve their values in the final race, in comparison with the series.

**The conclusions have emphasized the fact that** the time and the movement speed, in most of the studied female runners, recorded small oscillations between qualifications and the final races, which partially confirms the first hypothesis, but also the fact that most of the little girls run slower in the final race than in the qualifications, which negates the second hypothesis.

**Keywords:** running, competition, little girls, speed

### Introduction

"The possibility to rapidly enhance the running and movement speed" (M.V. Zațiorski, 1972), when talking about little girls III, of 8-9 years old, about little girls II of 10-11 years old, and about little girls III of 12-13 years old, is primarily dependent on the hereditary predisposition, and secondly, on the level of the general and specific training. T. Ardelean, in 1991, thinks that "the capitalization of the speed potential depends on the practical-methodical skill of each physical education teacher", but when we discuss children, we must take into account the physical and psychological fragility of their age.

The athletic result depends on respecting the training principles aiming the achievement of a large number of repetitions, avoiding the use of the same tempos and to promote the analytical approach

In its essence, the athletic result is the combination of great efforts during the initiation in the specific speed events motor training, and of being aware of your own competitive possibilities.

The athletic performance represents the product of a great development of the senses and of the personality, manifesting through increased adaptation possibilities to the training and competition environments.

### Material and method

The analysis of the recorded time and speed during the 60 m, 50 m, and 40 m races, specific to the categories: little girls I, little girls II, and little girls III, aimed to establish a starting point for knowing the manifestation values during the indoor national championship, and, implicitly, for choosing

criteria during selections.

*The hypotheses* we set to verify in this study started from the belief that the time and the

<sup>1</sup>University „Vasile Alecsandri” of Bacău, ROMANIA

<sup>2</sup>Ph.D. candidate at the University of Pitești, ROMANIA

Email: rbogy75@yahoo.com

Received 05.05.2011 / Accepted 08.07.2011

method for avoiding the speed barrier (an idea advocated by M. Pradet, 1996, A. Duray, in 1997).

movement speed have small oscillations between the qualifications and the finals races, and that most girls run better in the final race than during qualifications. In this study, we used as research methods: the study of the specialized literature, the observation, the electronic recording, the statistical-mathematical method and the chart method. For this research, we chose 24 female sprinters as subjects (8 little girls I, 8 little girls II, and 8 little girls III). The recordings were made in March 26-27, at the **Bucharest Track and Field Hall**.

The results were recorded using the Alge Timing Optic 2 electronic timing system. They were centralized, entabulated, and analyzed.

### Results

In the National Track and Field Championship - Indoor, during the sprint events, 45 little girls I participated in the 60 m, 39 little girls II in the 50 m, and 20 little girls III in the 40 m, coming from different Romanian sportive clubs and associations.

Our study comprised only the girls ranked among the first in the finals. Because all types of manifestation of the speed are trained "through competition demands that imply a capture and a quick process of information, as well as high movement and action speeds" (K.H. Bauersfeld, 1988), we considered that a parallel presentation of the results recorded for the three age categories can open a door for knowing the children's evolution, and can ensure a real information on the possibilities of these age categories.

The results were recorded during the National Track and Field Championship, for Children I, II, III, organized in Bucharest by the Romanian Track and Field Federation. In this competition 382 children participated, of which 176 girls and 206 boys.

The analysis and presentation of the results was made separately, for the time, and for the movement speed.

### *Analysis of the recorded time in the girls I, II, and III*

**The time** recorded during the qualifications series and during finals, in the little girls I, II, and III, for the 60 m, 50 m, and 40 m events, can be found in Table 1.

- **the time in the 60 m run** made by the eight female finalists was between 8.20 and 8.62 seconds, with an average value of 8.48 seconds in the series, and between 8.19 and 8.64 seconds with an average value of 8.49 seconds in the finals. The participants obtaining the first three times during the series succeeded this feat also in the finals, but only the first place winner had improved her time in the finals with 0.01 seconds, the other two runners having scored lower values, with 0.05 seconds. Four of the eight contestants ran better in the finals, while four of them recorded time values below the ones in the series.

- **the time in the 50 m run** made by the eight female finalists was between 7.48 and 8.02 seconds, with an average value of 7.77 seconds in the series, and between 7.50 and 8.26 seconds with an average value of 7.89 seconds in the finals. Two of the contestants who recorded the first three time values in the series could not win the first three places in the finals. The winner of the first place in the series, with a time of 7.48 seconds, succeeded, without improving her performance, to come also in the first place, in the finals. The second place winner in the finals, with a result of 7.75 seconds, improved her time with 0.03 seconds in comparison with the series, where she was credited with the third place, while the third place winner, with a result of 7.77 seconds, increased her performance from the series, with 0.18 seconds. Only one contestant managed to record a better time in the final race than the one in the series.

**Table 1. The time during the sprint race – little girls**

Table 1. The time during the sprint race – little girls												
LITTLE GIRLS I					LITTLE GIRLS II				LITTLE GIRLS III			
No.	I	V	60 m (s)		I	V	50 m (s)		I	V	40 m (s)	
			series	finals			series	finals			series	finals
1	BC	13	8.20	8.19	PAI	11	7.48	7.50	ARI	9	6.98	6.91
2	BM	12	8.28	8.23	UAD	10	7.72	7.75	BML	9	6.92	6.91
3	VAI	13	8.49	8.54	ABG	11	7.91	7.77	AIR	8	6.88	7.01
4	CAI	13	8.54	8.55	LCC	11	7.74	7.83	BL	9	7.33	7.20
5	CAP	13	8.60	8.55	LMV	11	7.71	7.84	PM	9	7.16	7.29

6	PIM	13	8.62	8.61	UMAP	11	7.89	7.96	DIM	9	7.34	7.43
7	MD	13	8.53	8.63	BVE	11	7.66	8.22	DLM	9	7.47	7.58
8	B.A.	13	8.61	8.64	PL	11	8.02	8.26	BAI	8	7.69	7.71
	<b>Av.</b>	<b>12.88</b>	<b>8.48</b>	<b>8.49</b>	<b>Av.</b>	<b>10.88</b>	<b>7.77</b>	<b>7.89</b>	<b>Av.</b>	<b>8.75</b>	<b>7.22</b>	<b>7.26</b>
	<b>S</b>	<b>0.35</b>	<b>0.16</b>	<b>0.18</b>	<b>S</b>	<b>0.35</b>	<b>0.17</b>	<b>0.25</b>	<b>S</b>	<b>0.46</b>	<b>0.29</b>	<b>0.30</b>
	<b>Max. val.</b>	<b>13</b>	<b>8.62</b>	<b>8.64</b>	<b>Max. val.</b>	<b>11</b>	<b>8.02</b>	<b>8.26</b>	<b>Max. val.</b>	<b>9</b>	<b>7.69</b>	<b>7.71</b>
	<b>Min. val.</b>	<b>12</b>	<b>8.2</b>	<b>8.19</b>	<b>Min. val.</b>	<b>10</b>	<b>7.48</b>	<b>7.5</b>	<b>Min. val.</b>	<b>8</b>	<b>6.88</b>	<b>6.91</b>

- *the time in the 40 m little girls III*, made by the eight female finalists was between 6.88 and 7.69 seconds, with an average value of 7.22 seconds in the series, and between 6.91 and 7.71 seconds with an average value of 7.26 seconds in the finals.

The contestants who recorded the first three time values in the series won also the first three places in the finals. The first place winner in the finals, even if during the series she came third, as time was concerned, managed to improve her performance with 0.07 seconds, finishing the race in 6.91 seconds, thus being declared the national indoor champion. The second place winner in the finals recorded the same time as the first place winner, 6.91 seconds, improving her time with 0.01 seconds than the series, keeping her position from the series. The third place winner, with a time of 7.01 seconds, records an improvement of 0.13 seconds, although during the series she obtained the best result in the competition (6.88 seconds). Two of the eight contestants managed to run faster in the final race than in the series, while the other six ran slower, which proves the instability at this age category.

#### ***Analysis of the movement speed in the little girls I, II, and III***

As it can be seen, the movement speed in the three events is different, because the studied subjects are different, both as age and as training level.

*The movement speed* recorded during the qualifications series and during finals, in the little girls I, II, and III, for the 60 m, 50 m, and 40 m events, can be found in Table 2.

*The speed in the 60 m little girls III*, made by the eight female finalists was between 7.31 and

6.96 m/s, with an average value of 7.07 m/s in the series, and between 7.32 and 6.94 m/s with an average value of 7.06 m/s in the finals. As we can see, for the average values recorded during the series and the finals, the difference is positive, of 0.01 m/s. The first two contestants managed to run in the final race with 0.01 m/s and 0.05 m/s faster, while the third ran with 0.04 m/s slower. The speed was, in the final race, better for four of the eight contestants, in comparison with the qualifications.

*The speed in the 50 m little girls III*, made by the eight female finalists was between 6.68 and 6.23 m/s, with an average value of 6.44 m/s in the series, and between 6.66 and 6.05 m/s with an average value of 6.34 m/s in the finals. The contestants who ran with a speed between 6.43 m/s and 6.66 m/s obtained a medal, and climbed the podium in the indoor championships finals. The movement difference, which can be considered small, of 0.02 m/s, made nevertheless possible for a girl to obtain a medal from a different metal, an aspect which underlines the importance of the length and frequency of the running step.

*The speed in the 40 m little girls III*, made by the eight female finalists was between 5.81 and 5.20 m/s, with an average value of 5.54 m/s in the series, and between 5.78 and 5.18 m/s with an average value of 5.52 m/s in the finals.

The contestants who were situated in the first three places, ran during the series with a speed between 5.73 and 5.81 m/s, and during the finals with a speed between 5.70 and 5.78 m/s. As we can see, the movement speed average value dropped in the finals, with 0.03 m/s, in comparison with the series.

<b>Table 2. The speed during the sprint race – little girls</b>												
<b>LITTLE GIRLS I</b>					<b>LITTLE GIRLS II</b>				<b>LITTLE GIRLS III</b>			
<b>No.</b>	<b>I</b>	<b>V</b>	<b>60 m (m/s)</b>		<b>I</b>	<b>V</b>	<b>50 m (m/s)</b>		<b>I</b>	<b>V</b>	<b>40 m (m/s)</b>	
			<b>series</b>	<b>finals</b>			<b>series</b>	<b>finals</b>			<b>series</b>	<b>finals</b>
1	BC	13	7.31	7.32	PAI	11	6.68	6.66	ARI	9	5.73	5.78
2	BM	12	7.24	7.29	UAD	10	6.47	6.45	BML	9	5.78	5.78
3	VAI	13	7.06	7.02	ABG	11	6.32	6.43	AIR	8	5.81	5.70
4	CAI	13	7.02	7.01	LCC	11	6.45	6.38	BL	9	5.45	5.55
5	CAP	13	6.97	7.01	LMV	11	6.48	6.37	PM	9	5.58	5.48
6	PIM	13	6.96	6.96	UMAP	11	6.33	6.28	DIM	9	5.44	5.38
7	MD	13	7.03	6.95	BVE	11	6.52	6.08	DLM	9	5.35	5.33
8	B.A.	13	6.96	6.94	PL	11	6.23	6.05	BAI	8	5.20	5.18
<b>Av.</b>		<b>12.88</b>	<b>7.07</b>	<b>7.06</b>	<b>Av.</b>	<b>10.88</b>	<b>6.44</b>	<b>6.34</b>	<b>Av.</b>	<b>8.75</b>	<b>5.54</b>	<b>5.52</b>
<b>S</b>		<b>0.35</b>	<b>0.13</b>	<b>0.15</b>	<b>S</b>	<b>0.35</b>	<b>0.14</b>	<b>0.20</b>	<b>S</b>	<b>0.46</b>	<b>0.22</b>	<b>0.22</b>
<b>Max. val.</b>		<b>13</b>	<b>7.31</b>	<b>7.32</b>	<b>Max. val.</b>	<b>11</b>	<b>6.68</b>	<b>6.66</b>	<b>Max. val.</b>	<b>9</b>	<b>5.81</b>	<b>5.78</b>
<b>Min. val.</b>		<b>12</b>	<b>6.96</b>	<b>6.94</b>	<b>Min. val.</b>	<b>10</b>	<b>6.23</b>	<b>6.05</b>	<b>Min. val.</b>	<b>8</b>	<b>5.2</b>	<b>5.18</b>

**Discussions**

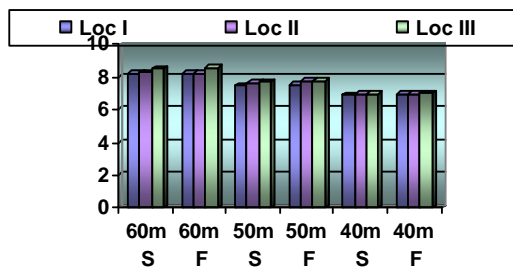
As we can see in Chart 1, between the individual results from the series and the finals, there are no large differences in the three events, for the runners placed in the first three positions.

The comparison between the times (Chart 2) recorded during the 60 m and 50 m, shows that for the 10 m of difference in length between the two

events, there are time differences of 0.71 seconds in the series, and 0.55 seconds in the finals. Also, between the 50 m and the 40 m events, for the same 10 m difference, there are time differences of 0.60 seconds in the series, and 0.63 seconds in the finals.

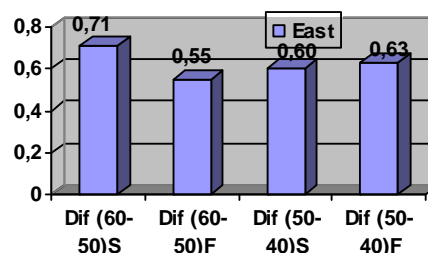
We would like to emphasize the fact that the difference is sustained also by the age difference between the three groups of athletes.

Chart 1 - The dynamics of the first three time results from the series and finals



There are no large differences between the individual results in the series and the finals of the

Chart 2 - The difference between the average time values between the events



runners placed in the first three positions, as it can be seen in Chart 3.

The comparison between the speeds (Chart 4) recorded during the 60 m and 50 m, shows that for the 10 m of difference in length between the two events, there are speed differences of 0.63 m/s in the series, and 0.72 m/s in the finals. Also, between the 50 m and the 40 m events, for the same 10 m

difference in length, there are speed differences of 0.90 m/s in the series, and 0.82 m/s in the finals.

In a study conducted on children, in 2007, B.C. Rață (2008, page 44) found a value of the arithmetical means for the movement speed of 5.82 m/s, in one group.

Chart 3 - The dynamics of the first three movement speed results from the series and finals

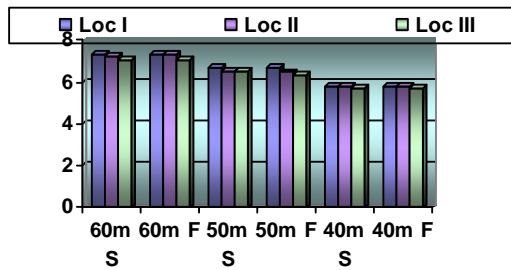
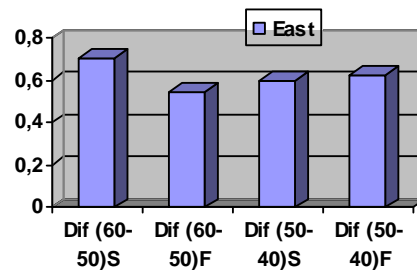


Chart 4 - The difference between the average speed values between the events



### Conclusions

The analysis of this study allowed the following conclusions:

1. The time and the movement speed, in most of the studied female runners, recorded small oscillations between qualifications and the finals races, which partially confirm the first hypothesis.
2. Most of the girls run slower in the final race than in the qualifications, which negates the second hypothesis.
3. The time recorded by the winners, in the two races, for the 60 m, is better in the finals (8.19s) than in the series (8.20s), for the 50 m is better in the series (7.48s) than in the finals (7.50), for the 40 m events is better in the finals (6.91s) than the series (6.98s).
4. The speed recorded the same dynamics as the time, having a value for the 60 m run better in the finals (7.32m/s) than in the series (7.31m/s), for the 50 m run better in the series (6.68 m/s) than in the finals (6.66 m/s), for the 40 m run better in the finals (5.78 m/s) than in the series (7.73m/s).
5. The average values for the speed and time can constitute a criterion in the selection process for the track and field events, and can be a training parameter.

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