



## Study on the Women who Held National, Olympic and World Record at the 1500 m. Discipline

### KEYWORDS

athletes, performance, middle run, mathematics.

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**ABSTRACT** *The study is longitudinal type, records following the evolution of the women national, Olympic and world record at 1500 m. discipline (BORIGA, N.A., SIMIONESCU, V., 1997; www.en.wikipedia.org). It also has transverse character, all somatic data were taken on each athlete in part. (www.sports-reference.com). There were registered 60 performances of 31 athletes. As research methods we used the case study, observation and mathematics. The results we hope to help coaches, especially those dealing with children and youth.*

### INTRODUCTION

Middle and long runs, are among the most spectacular disciplines of athletics.

The fast pace of the races, runners suppleness, spectacular finisher have contributed more as these disciplines to gain increasingly more followers.

The considerable increase athletic performance in this group of disciplines its explanation in training methods, which have continually improved over the years, due to their experience of coaches and athletes and new conquests of science in training (Puică I., 2008).

The effort that we provide middle runners fall in mixed type. In this exercise duration is between 1-3/5 minutes, so it than is necessary for anaerobic biochemical processes to provide energy for themselves, but it is shorter than the adaptation requirements of cardiac and respiratory functions, after which it can provide O<sub>2</sub> needed just about aerobic energy release (Nicu A., 1993).

Factors favoring the sports performance in these disciplines are: aerobic capacity, anaerobic capacity, running technique and volition.

As a general definition, we can say that the performance is "the result of human action superior to known results" (Tîrfea C., 2002). In evaluating athletes we must always take into account two fundamental components of human performance in general: the biological and psychological.

In this way the body composition corresponds to the structural components of the human body composed of elements of very different nature and density (bone, fat, water, protein), maintained in constant proportion and functionally integrated (Cordun M., 2011). In this way the precise knowledge of the athlete's height and weight and is welcome framing it in a test pattern.

Many times in the sport's practice, while coaches respected the specific training method's guideline, worked with athletes selected by the constitutional model, they did not achieved the expected performance, because they neglected psychological component.

The goal of mental preparation for competitions consists in forming for athletes, of a system of attitudes and behavior, with operational and regulative character through which it is

flexible and adapts to contest's situations and opponents actions (Holdevisi I., Epuran M., Tonița F., 2008).

It is obvious that the main objectives of the training are participating in competitions, challenge other athletes in the competition for a place in the hierarchy of sports and achieve high performance.

However, the importance of the competitions passing of these purposes, because they are the most important and specific methods of estimation the progress of athlete (Bompa T.O., 2001).

### METHODS AND SUBJECTS

The study is longitudinal type, records following the evolution of the women national, Olympic and world record at 1500 m. discipline (BORIGA, N.A., SIMIONESCU, V., 1997; www.en.wikipedia.org). It also has transverse character, all somatic data were taken on each athlete in part. (www.sports-reference.com). There were registered 60 performances of 31 athletes. As research methods we used the case study, observation and mathematics.

### RESULTS

The results we hope to help coaches, especially those dealing with children and youth. In what follows, we present the 3 tables and 3 graphs representative undertaken research.

**Table 1 Evolution of National records**

N°	Name and Surname	Citizenship	Performance	Date of birth	Age (years)	Height (cm)	Weight (kg)
1.	Eddő TREYBÁL	HUN	4:54.2	28.06.1950	---	---	---
2.	Eddő TREYBÁL	HUN	4:34.2	23.10.1953	---	---	---
3.	Aniela PAȘCUC	ROU	4:41.0	29.07.1956	---	---	---
4.	Elizabeta BACIU	ROU	4:32.3	22.07.1967	19	---	---
5.	Maria LENCA	ROU	4:27.4	29.06.1969	---	---	---
6.	Veronica GĂLBOR	ROU	4:26.3	16.08.1969	---	---	---
7.	Maria LENCA	ROU	4:25.8	30.08.1969	---	---	---
8.	Maria LENCA	ROU	4:24.6	19.08.1969	---	---	---
9.	Maria LENCA	ROU	4:23.0	06.08.1970	---	---	---
10.	Maria LENCA	ROU	4:19.5	24.09.1971	---	---	---
11.	Natalia ANDREI	ROU	4:18.3	13.05.1972	20	166	52
12.	Natalia ANDREI	ROU	4:14.8	11.06.1972	20	166	52
13.	Bonca MELAI	ROU	4:11.86	26.07.1974	32	167	49
14.	Natalia ANDREI	ROU	4:10.3	05.07.1974	22	166	52
15.	Natalia ANDREI	ROU	4:09.3	22.06.1975	23	166	52
16.	Natalia ANDREI	ROU	4:08.4	17.08.1975	23	166	52
17.	Natalia MĂRĂȚESCU	ROU	4:07.7	15.08.1976	24	166	52
18.	Natalia MĂRĂȚESCU	ROU	4:04.2	08.08.1976	24	166	52
19.	Natalia MĂRĂȚESCU	ROU	4:04.00	30.08.1976	24	166	52
20.	Natalia MĂRĂȚESCU	ROU	4:02.66	17.07.1977	25	166	52
21.	Natalia MĂRĂȚESCU	ROU	4:01.2	11.08.1978	26	166	52
22.	Natalia MĂRĂȚESCU	ROU	3:59.77	03.09.1978	26	166	52
23.	Bonca MELAI	ROU	3:58.6	16.06.1979	27	167	49
24.	Natalia MĂRĂȚESCU	ROU	3:58.2	11.07.1979	27	166	52
25.	Mariana PUICA	ROU	3:57.48	31.07.1982	32	168	54
26.	Mariana PUICA	ROU	3:57.22	01.07.1984	34	168	54
27.	Doina MELINTI	ROU	3:56.7	12.07.1986	30	171	59
28.	Paula IVAN	ROU	3:56.22	17.08.1988	25	170	57
29.	Paula IVAN	ROU	3:51.90	01.10.1988	25	170	57

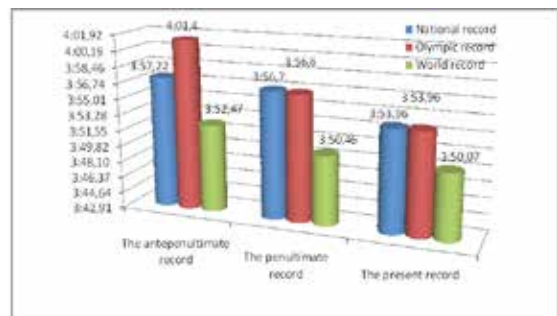
**Table 2 Evolution of Olympic records**

N°	Name and Surname	Citizenship	Performance	Date of birth	Age (years)	Height (cm)	Weight (kg)
1.	Lyudmila BRAGINA	URS	4:01,4	09.09.1972	29	165	57
2.	Tatyana KAZANKINA	URS	3:56,6	1980	29	162	47
3.	Paula IVAN	ROU	3:53,96	01.10.1988	25	170	57

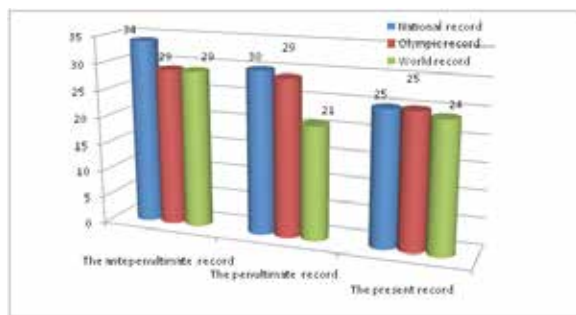
**Table 3. Evolution of World records**

N°	Name and Surname	Citizenship	Performance	Date of birth	Age (years)	Height (cm)	Weight (kg)
1.	Lempi AALTONEN	FIN	5:44,0	06.1913	---	---	---
2.	Anna MURSHINA	URS	5:18,2	19.08.1927	---	---	---
3.	Anna MURSHINA	URS	5:07,0	16.09.1934	---	---	---
4.	Lidia FREYBERG	URS	5:02,0	13.07.1936	---	---	---
5.	Yevdokya VASILEVA	URS	4:57,2	30.07.1936	---	---	---
6.	Yevdokya VASILEVA	URS	4:55,2	13.09.1937	---	---	---
7.	Anna ZAYTSEVA-BOSNENKO	URS	4:51,8	10.06.1940	---	---	---
8.	Yevdokya VASILEVA	URS	4:50,0	17.08.1944	---	---	---
9.	Olga OVEYANNIKOVA	URS	4:57,8	15.09.1946	---	---	---
10.	Nina PLETNYOVA	URS	4:57,0	30.08.1952	---	---	---
11.	Phyllis PERKINS	GBR	4:55,4	17.05.1956	22	165	60
12.	Diane LEATHIER	GBR	4:50,0	16.05.1957	24	178	62
13.	Diane LEATHIER	GBR	4:29,7	19.07.1957	24	178	62
14.	Margie CHAMBERLAIN	NZL	4:19,0	12.08.1962	27	169	55
15.	Ann Rosemary SMITH	GBR	4:17,5	03.06.1967	26	170	66
16.	Maria GOMMERS	NED	4:15,6	24.10.1967	28	166	51
17.	Paola PIONI	ITA	4:12,4	02.07.1969	24	168	55
18.	Jacodine KHLICKOVA	CZE	4:10,7	20.09.1969	27	167	54
19.	Karen BURSELLIT	GER	4:09,6	15.06.1971	26	167	51
20.	Lyudmila BRAGINA	URS	4:06,9	18.07.1972	29	165	57
21.	Lyudmila BRAGINA	URS	4:06,5	04.09.1972	29	165	57
22.	Lyudmila BRAGINA	URS	4:05,1	07.09.1972	29	165	57
23.	Lyudmila BRAGINA	URS	4:01,4	09.09.1972	29	165	57
24.	Tatyana KAZANKINA	URS	3:56,0	28.06.1976	25	162	47
25.	Tatyana KAZANKINA	URS	3:55,0	06.07.1980	29	162	47
26.	Tatyana KAZANKINA	URS	3:52,47	03.08.1980	29	162	47
27.	Qu YUNGIA	CHN	3:50,66	11.09.1993	21	172	56
28.	Gocrobe DIBARA	BTH	3:50,67	17.07.2015	24	168	52

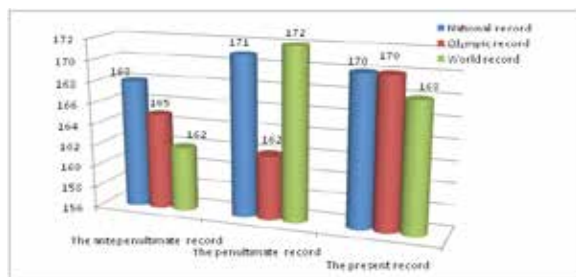
**Graph 1 Performances of the best 3 athletes who owned records**



**Graph 2 The age of the best 3 athletes (years)**



**Graph 3 The height of the best 3 athletes (cm)**



**DISCUSSION**

**Performance.** For national records we have a total of 11 athletes totaling 29 performances. The first record was registered in 1950 and was 4:54.2. The current record is 3:53.96 and resists 1988. The amplitude of performance is 1:00.24. For Olympic records we have 3 results, the first women participation in that discipline was recorded barely in 1972. For world records we have a total of 19 athletes totaling 28 performances. The first record was registered in 1913 and was 5:44.0. The current record is 3:50,07 in 2015. The amplitude of performance is 1:53,93.

**Citizenship.** For world records we have 10 citizenships, noting that the former Soviet Union owns 16 of the 28 results.

**Age.** For national records amplitude is 18 years, between 19 and 37 years. For world records amplitude is 8 years, between 21 and 29 years.

**Height.** For national records amplitude is 5 cm, between 166 and 171 cm. For world records amplitude is 16 cm, between 162 and 178 cm.

**Weight.** For national records amplitude is 10 kg, between 49 and 59 kg. For world records amplitude is 19 kg, between 47 and 66 kg.

**CONCLUSIONS**

- The national and Olympic record belong to the same athlete and resists for 28 years.
- The amplitude of age at national records is significantly higher than that of world records.
- The amplitude of height and weight at world records is significantly higher than that of national records.

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