

THE INFLUENCE OF COMBATIVES ON GENERAL MOTOR PERFORMANCE OF PUPILS

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ABSTRACT

The author in his article solves the problem of using preparatory combatives at primary school, especially the influence of preparatory combatives on general motor performance of young children at primary school. The main research method was pedagogical experiment during schools year 2011/2012 at primary schools in Banská Bystrica. At experimental groups boys and girls author used preparatory combatives and fall down techniques during P.E. lessons. The pupils were 10 years old. Before and after pedagogical experiment we realised measurements of general motor performance by tests: shuttle run 4x10 m, 12 minute run, sit-ups 60 s, standing broad jump, bent arm hang and JCMT test. 1st measurement was realised in September 2011 and 2nd measurement in June 2012.

The author found out the statistically significant results at experimental groups boys and girls and improvement especially in speed and strength abilities. Combatives together with exercises from athletics, sports games, motor games, gymnastics had positively influence on general motor performance of pupils at primary school. The author is recommending putting preparatory combatives and also fall down techniques to P.E. lessons at primary school.

Key words: combatives, general motor performance, primary school

INTRODUCTION

At primary schools are using basic combatives and also falls techniques, like part of martial arts (Bartík – Sližik – Reguli, 2007).

Falls are an important component of any basic combat training system. They are significant not only for fighting but also in other movement activities (either as intentional or unintentional falls) but also in everyday life as protection against avoidable injury. Falls, meaning the intentional movements, are used also in many a sport which does not fall into the category of martial arts/combatives, mainly sport games (e.g. goalkeepers, in volleyball defence, in handball when throwing into the goal). The main aim of any fall technique is to prevent injury when falling or at least minimise the probability of injuring oneself (Reguli, 2004).

Basic combatives are fighting exercises carried out by relatively simple movements. In fact, they do not have to be practised to any great degree before using them. They are so called basic combative relations. We differentiate them according to vectors of power and application and their biomechanical complexity:

- centrifugal (pulls),
- centripetal (pushes),
- opposition (resistance):
 - pulling opposition,
 - pushing opposition,
 - own opposition. (Reguli, 2004).

Basic combatives are very suitable for pupils at primary and basic schools and are very popular among boys and girls (Bartík-Sližik-Adamčák et.al 2010).

METHODS

The main research was pedagogical experiment during schools year 2011/2012 at primary schools in Banská Bystrica. At experimental groups boys and girls we used basic combatives and falls techniques during P.E. lessons. The pupils were 10 years old. Before and after experiment we realised measurements of general motor performance by tests: shuttle run 4x10 m, 12 minute run, sit-ups 60 s, standing broad jump, bent arm hang and JCMT test. 1st measurement was realised in September 2011 and 2nd measurement in June 2012.

As a part of the VEGA 1/0927/12 grant programme, we decided to monitor the influence of combatives on motor general performance.

RESULTS AND DISCUSSION

The results of tests we describe at table 1-8.

Tables 1-8 show the level of physical development and general motor performance of experimental and control groups.

Table 1 Experimental group – 1st measurement (girls-n= 29)

	BH (cm)	BW (kg)	SR 4x10m	SBJ (cm)	RUN 12 min.	SU (n)	BAH (s)	JCMT (n)
M	137,34	33,10	12,95	142,14	1777,48	34,17	6,81	53,14
SD	5,347	6,155	0,806	19,699	356,208	10,124	6,805	13,242
Medium	138	32	13	143	1722	35	5,2	51
Minimum	126	26	11	95	1121	18	0	30
Maximum	150	47	14,9	178	2354	52	31	72

Table 2 Experimental group – 2nd measurement (girls-n= 29)

	BH(cm)	BW(kg)	SR4x10m	SBJ(cm)	RUN12min.	SU(n)	BAH(s)	JCMT(n)
M	140,59	36,45	12,28	146,55	1873,7	37,31	10,27	60,83
SD	5,577	5,998	0,922	18,230	372,55	10,082	9,272	14,320
Medium	141	35	12	147	1837	40	8,5	60
Minimum	130	29	11	108	1150	21	1	35
Maximum	155	50	14	180	2523	56	40	83

T-test and Pearson correlation between 1st and 2nd measurements (girls)

t-test	12,650**	13,679**	4,827**	7,086**	5,615**	6,178**	4,624**	12,998**
Pearson	0,969**	0,977**	0,630*	0,987**	0,969**	0,963**	0,919**	0,976**

Table 3 Experimental group – 1st measurement (boys-n= 22)

	BH (cm)	BW (kg)	SR 4x10m	SBJ (cm)	RUN 12 min.	SU (n)	BAH (s)	JCMT (n)
M	136,91	34,36	12,10	148,09	1920,7	37,27	11,05	63,68
SD	4,927	5,645	0,765	18,068	340,90	12,721	9,750	10,353
Medium	138,5	33	12	152,5	1959	34	10,5	62
Minimum	128	26	11	100	1290	22	0	42
Maximum	147	48	13,9	173	2400	85	40	81

Table 4 Experimental group – 2nd measurement (boys-n= 22)

	BH(cm)	BW(kg)	SR 4x10m	SBJ (cm)	RUN 12min.	SU (n)	BAH (s)	JCMT(n)
M	140,09	37,09	11,77	152,32	2060,6	40,05	15,15	71,55
SD	5,117	6,023	0,813	16,887	437,56	12,061	10,490	10,879
Medium	140,5	35,5	12	156,5	2034,5	38,5	14,6	74
Minimum	131	28	11	107	1299	24	1	49
Maximum	150	51	14	178	2837	84	48,5	88

T-test and Pearson correlation between 1st and 2nd measurements (boys)

t-test	10,645**	11,876**	3,836*	5,615**	4,018**	5,076**	6,652**	7,585**
Pearson	0,962**	0,985**	0,876**	0,982**	0,942**	0,980**	0,962**	0,896**

Table 5 Control group - 1st measurement (girls-n = 66)

	BH (cm)	BW (kg)	SR 4x10m	SBJ (cm)	RUN 12 min.	SU (n)	BAH (s)	JCMT (n)
M	139,62	31,70	13,07	140,15	1849,2	32,15	12,26	59,89
SD	8,152	6,631	1,008	16,467	381,05	10,207	11,153	14,965
Medium	140	30	12,85	141	1811	33,5	10,2	60
Minimum	123	20	11,4	100	1100	11	0	31
Maximum	160	57	16,3	174	2840	53	63,5	90

Table 6 Control group - 2nd measurement (girls-n = 66)

	BH (cm)	BW (kg)	SR 4x10m	SBJ (cm)	RUN 12 min.	SU (n)	BAH (s)	JCMT (n)
M	143,52	34,95	12,76	145,68	1905,0	37,73	13,58	61,73
SD	8,448	6,891	0,893	16,710	367,93	8,522	11,765	14,756
Medium	143,5	33	12,6	145	1909	38	11,8	62,5
Minimum	126	22	11,3	108	1190	20	0	27
Maximum	165	60	15,3	180	2870	57	65,5	91

T-test and Pearson correlation between 1st and 2nd measurements (girls)

t-test	23,654**	21,706**	6,140**	6,867**	4,366**	7,546**	4,016**	4,972**
Pearson	0,988**	0,984**	0,916**	0,922**	0,962**	0,809**	0,974**	0,979**

Table 7 Control group - 1st measurement (boys-n = 56)

	BH (cm)	BW (kg)	SR 4x10m	SBJ (cm)	RUN 12 min.	SU (n)	BAH (s)	JCMT (n)
M	139,04	30,93	12,68	150,61	2089,7	38,66	20,50	63,93
SD	6,941	5,059	0,814	13,229	323,10	7,359	14,356	14,476
Medium	140	30	12,6	150	2059	38,5	15,65	63
Minimum	123	21	11,1	115	1612	22	0	34
Maximum	155	46	14,6	175	2963	56	60	101

Table 8 Control group - 2nd measurement (boys-n = 56)

	BH (cm)	BW (kg)	SR 4x10m	SBJ (cm)	RUN 12 min.	SU (n)	BAH (s)	JCMT (n)
M	142,98	33,91	12,46	154,21	2137,3	41,07	21,38	66,27
SD	6,924	4,981	0,792	15,081	341,27	7,599	15,089	14,334
Medium	144	33	12,2	154,5	2125	41	16,7	66
Minimum	126	24	10,9	117	1480	24	0	36
Maximum	157	45	14,2	185	2992	60	65,2	104

Legend:

BH - body height
 BW – body weight
 SR (4x10m) – shuttle run 4x10 m
 SBJ – standing broad jump
 RUN (12 min) – 12 min. endurance run
 SU - sit ups
 BAH – bent arm hang
 JCMT – Jacik's complete motor test
 M – Arithmetic mean
 SD – standard deviation
 * p < 0,05
 ** p < 0,01

CONCLUSION

Using of combatives, especially combative games and combative exercises during the pedagogical experiment we positively influenced the general motor performance of young children at primary school. Combatives together with exercises from athletics, sports games, motor games, and gymnastics had positively influence on general motor performance of pupils at primary school. Basic combatives had big contribution to development of strength abilities, especially static strength of hands. By research it was discovered that lessons which consisted from combatives were highly appreciated by pupils. From these reasons we recommend putting of combatives to physical education process at primary school.

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