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THE EFFECT OF ADDITIONAL AEROBIC TRAINING IN THE DEVELOPMENT OF SOME MOTOR SKILLS IN HANDBALL

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This longitudinal research character has intended to establish the impact of aerobic exercise of extra character in the training sessions on several motor variables in order to achieve results in handball. The sample has included 15 cadet members of the Handball Club Zhegra as an experimental group and 15 cadet handball-players of the Handball Club Drita as a controlling group. The motor assessment skills of new handball players has been done in two periods of time before and after the additional program of aerobic exercises in each training session (15 minutes ride with ergo-bicycle with a speed of 30 circulations per minute with a load of 25 W). There were three training sessions held per week, or totally 36 training sessions. Considering the motor skill, evaluation 9 variable latency space covering motor field has been applied. In order to process with the results, the Independent Samples Test has been applied. The variable quantitative survey shows that there has been a statistical quantitative change between the experimental group and the control group. The obtained results show that additional exercises of the aerobic character in the preparatory phase with the cadet handball players has a particular impact in speed and coordination as a motor skill to have an impact on the handball players' performance. In the handball game, it is important that scheduled treatment trainings at these ages should be filled with exercises of aerobic character, because these exercises have an impact on aerobic capacity, and they also have an impact on physical motor capacity, similar to movement structure (in the case of this research to speed the execution of motor tasks, speed, coordination and agility).

***Key words**: handball, motor variables, independent samples test, training treatment.*

Introduction

In the sports game group, handball is seen as a very complicated game with a particular motor and functional structure. The first rule determines basketball as a game to be played in teams with five players, where the goal of each team is to score and at the same time to stop the other team to score against them. Different kind of authors classify handball into three main criteria: a) based on the complexity structural criteria basketball is a complex sport composed of a group of complex and simple movements cooperating among the team members; b) based on the domination process energetic criteria of basketball it belongs mainly to aerobic sports: c) based on the domination criteria handball is a sport with the domination of force, resistance, speed and preciseness (Matkovic et. al., 2003). The flowing of the game is like that, where short activities of high intensity (maximal and submaximal) continuously are substituted with periods of active breaks, developed in a particular space and time. That's why basketball belongs to the poly-structural sports with the domination of complex poly structural movements.

Nowadays, achievement of results in the particular sport is as high as the sportsmen and sportswomen during their conditional preparation may achieve or exceed these challenges based on their physical trainings. However, increasing of activity means not only the volume of training but also organization like a process, choosing the best methods, most rational ranking of burden and rest during a training process or some training processes and periods of time. All of this should be done without any breaking taking care of sportsmen/sportswomen condition. This difficult situation may be done during the optimal leading with the overall educational processes of the training process. In order to understand the cybernetics of the handball game better, this may be done during the sports activity survey. It is possible to make a particular classification where all the sports may be divided into particular (similar) groups, because, the rules about one similar activity group doesn't necessary mean they should be valid for the other group, too. Some of

the sports activity, which have been applied very much in the world today, it is possible and based on their specification we may divide them into five main groups (Malacko, 1986). Handball as a sport, which is classified as a collective sport. However, based on the movements it belongs to the very structural and complex sport with cyclic and acyclic movements. It is a much popularized sport in the world which is shown by presence of the dynamism, emotion, attraction and plenty of complex, technical and tactical movements happening on all parts of the field. The longitudinal character investigations are very important in order to collect as much information as possible about the way of their motor skill development which is a sign of handball results.

The goal of this investigation is to certify the additional training impact of the aerobic character in the training sessions on some of the motor variables, which play a key role to achieve the results in handball. However, certifying this variable is of particular importance in the theoretical and practical aspect in sports, because it enhances knowledge of a more qualitative training process.

Material & methods

Samples, used for this purpose have been defined as a cadet handball-player of both handball Clubs of Gjilan Municipality. In this survey, 16 cadet handball-players of the *Zhegra*Handball Club have been included as an experimental group (15 minutes ergo-bicycle riding at a speed of 30 cycles per minute with a load of 25 W) and 16 more cadet handball-players of "Drita" Handball Club, as a controlling group (standard trainings).

Evaluation of motor skills with new handball players has been done in two periods of time; before and after the standard training program application of the controlling group as well as the standard training program application of aerobic character as additional training in each training session, three training sessions per week in total, which means 36 training sessions.

In order to evaluate the motor skills, 9 motor variables have been applied that cover the latent space of some motor fields. Mainly, motor speed skill, explosive force coordination and flexibility tests have been included. In order to evaluate the motor skills, the following variable have been included: 20 meters running (MR 20), hand taping (HATA), foot taping (FOTA), Long jump (LOJU), High jump (HIJU) Eight with bending (EWBE), side running (SIRU), bending forward on a bench (BFBE), opened-side legs (OPSL).

In accordance with the character and the goal of survey, necessary statistical and mathematical procedures have been applied. The results processing has been done according to the SPSS 17.0 program. In order to determine the transformation and difference level between the controlling and experimenting group in the initial and filial statement the T-test (independent samples test) has been applied.

Results

In table 1 the basic, statistical and distributive parameters have been presented with the cadet handball players of both handball clubs, Handball Club "Zhegra" as an experimental group and Handball Club "Drita" a controlling group, before training. After having analyzed this table, we come to the conclusion that coefficients of the variation of the motor variables show that both playing groups are different. Handball players of the HC "Zhegra" an experimenting playing group more homogeneous are presented in the 8 variable Eight with bending (EWBE), with Cv = 6.09. However, as a more heterogeneous playing group are presented in the forward bending on the bench (BFBE), with Cv = 16.86. The HC "Drita" as a controlling more homogeneous playing group are presented in the flexibility variable, opened-side legs (OPSL), with Cv = 7.62. However, as a more heterogeneous playing group it is presented in the variable High jump (HIJU), with Cv = 21.49.

In table 2, the basic statistical and distributing parameters with the cadet handball players of both clubs after the training session have been presented. After having inspected this table we come to the conclusion that motor variables of variation coefficient of both groups are different. However, the motor variables of the HC "Drita", as a controlling group after the standard training session we see a kind of homogeneity in performing all kinds of motor duties. The HC "Zhegra" handball players as an experimenting group, after the kinesiology treatment with standard trainings and additional exercises of the aerobic type, is presented more homogeneous with the 20 meters running variable (MR20), with Cv = 6.86. However, as a more heterogeneous group they are presented with the long jump variable (LOJU), with Cv = 20.39. The HC "Drita" handball players as a more homogeneous group are presented in the flexibility variable side opened-legs (MFLHA) with Cv = 3.00. However, as a more heterogeneous playing group they are with the lea High jump variable (HIJU) with Cv = 13.96.

Table 1. The basic statistical parameters of the motor variables with the experimenting handball players of the Handball Club“Zhegra” and the controlling playing group handball players Handball Club “Drita” before the training session.

	HC “Zhegra”				HC “Drita”			
	N	Mean	Std. Dev.	Cv	N	Mean	Std. Dev.	Cv
MR 20	16	3.4519	0.28562	8.2743	16	3.6406	0.33274	9.1397
HATA	16	26.1875	3.5255	13.4625	16	26.5625	2.96578	11.1653
FOTA	16	18.8125	2.31571	12.3094	16	19.4375	2.12818	10.9488
LOJU	16	180.0625	18.45524	10.2494	16	167.6875	21.34391	12.7284
HIJU	16	37.3125	5.58234	14.9610	16	37.875	8.13941	21.4902
EWBE	16	14.1819	0.86413	6.0932	16	14.6219	1.21945	8.3399
SIRU	16	12.01	1.25364	10.4383	16	12.5869	1.10229	8.7574
BFBE	16	39.4375	6.65301	16.8698	16	42.0000	5.16398	12.2952
OPSL	16	155.1875	8.4634	5.4537	16	160.6875	12.24592	7.6210

Table 2. The basic statistical parameters of the motor variables with the experimenting handball players of the Handball Club“Zhegra” and the controlling playing group handball players Handball Club “Drita” after the training session.

	HC “Zhegra”				HC “Drita”			
	N	Mean	Std. Dev.	Cv	N	Mean	Std. Dev.	Cv
MR 20	16	3.2575	.2235	6.8611	16	3.5513	.3020	8.5039
HATA	16	29.0000	2.9888	10.3064	16	27.6250	3.0523	11.0490
FOTA	16	23.1250	1.7464	7.5521	16	21.4375	2.1899	10.2153
LOJU	16	182.2500	23.6572	12.9807	16	195.1250	13.7979	7.0713
HIJU	16	41.8750	8.5391	20.3920	16	41.0625	5.7325	13.9604
EWBE	16	13.1900	1.3546	10.2704	16	13.9725	.6384	4.5690
SIRU	16	11.4944	1.0649	9.2646	16	12.3769	.9960	8.0472
BFBE	16	49.0000	6.0442	12.3353	16	45.0000	5.3416	11.8702
OPSL	16	174.1250	12.4465	7.1481	16	167.1250	5.0183	3.0027

Table 3. Difference in the arithmetical averages in motor variables between the experimental group of the HC “Zhegra” and the control group HC “Drita” before and after the training

	HC “Zhegra” - KH “Drita” Start				HC “Zhegra” - KH “Drita” Finish			
	t	df	Sig. (2-tailed)	Mean Diff	t	df	Sig. (2-tailed)	Mean Diff
MR 20	-1.722	30	.095	-.18875	-3.127	30	.004	-.29375
HATA	-.326	30	.747	-.37500	1.287	30	.208	1.37500
FOTA	-.795	30	.433	-.62500	2.410	30	.022	1.68750
LOJU	1.754	30	.090	12.37500	-1.880	30	.070	-12.87500
HIJU	-.228	30	.821	-.56250	.316	30	.754	.81250
EWBE	-1.178	30	.248	-.44000	-2.090	30	.045	-.78250
SIRU	-1.382	30	.177	-.57687	-2.421	30	.022	-.88250
BFBE	-1.217	30	.233	-2.56250	1.984	30	.057	4.00000
OPSL	-1.478	30	.150	-5.50000	2.086	30	.046	7.00000

In order to determine and certify the programmed treatment impact (15 minutes ergo-bicycle ride with the load of 25 W, as an additional aerobic exercise) in terms of motor skill increase, the T-test has been applied for the independent groups (Table 3). In the experimental group of the HC “Zhegra” and controlling group HC “Drita” changes, after the training session, the following important statistical changes of the motor variable, in favor of the experimental group, have been shown: 20 meters running from the high start before the training (M. Diff. = 0,188, t = 1.722; df = 30; sig = 0.095, after the training (M. Differ = 625; t = 795; df = 30 ; sig = 0.433**,** Foot taping before the training (M. Differ.= -.625; t= -.795; df=30; sig= 0.433,

after the training M. Differ.= 1.687; t= 2.410; df=30; sig= 0.022); eight with bending before the training (M. Differ = -0.440; t = -1.178; dt = 30; sig = 0.248, after the training M. Differ = 0.782; t = 2.090; df = 30; sig = 0.045; Side running before the training (M. Differ = -0.576 t = 1.382; dt = 30; sig = 0.177, after the training M. Differ = 0.882; t = 2.421; df = 30; sig = 0.022 and opened-side legs before the training (M. Differ = -5.576; t = -1.478; df = 30; sig = 0.150, after the training M. Differ = 7.000; t = 2.086; df = 30; sig = 0.046).

Discussion

Analysis of the changes quantity shows that there was a statistically significant quantitative difference after applying the treatment trainer quarter (15 minutes ride on the bike 30 cycling per minute with a load of 25 W as additional exercise aerobic) the motor skills responsible for achieving success in handball game, which is confirmed by a statistically significant difference in the values obtained after training level treatment ($p< 0.05$). These results show that the application of a modern technology in the training prices can achieve higher results (Bokan with bp, 1995 Gojoviq 2009).

Quantitative major changes have been observed in changes to evaluate the motor skill, which for the structure of execution have similarities. The positive effect of the impact of treatment of programmed training with 15 minutes riding ergo bicycle speed 30 cycling per minute with a load of 25 W, as an additional exercise aerobically, is an undisputed evidence which shows how its complex trainings process and how such a program illustrates the setting of those motor skills, which are responsible to a considerable extend in increasing game efficiency of handball players. However, during the implementation of programmed training process, it is necessary to take care of all specifications of the game (Bompa, 1993).

Obtained changes in the motor variables applied in this research show that the quality and the work volume in preparing the cadet handball players is very important, because it is the best time to develop the motor skills, because at this time the motor centers, which are responsible to carry out these motor duties, start to stabilize.

Conclusions

Investigation has been completed in order to certify the programmed three-months training impact on some of the motor skills, which considerably have a great impact on the results of the handball game. Because of this in a sample of 32 cadet handball players involved in two basketball schools HC *Zhegra* and HC *Drita*, a nine motor test type covering the structure of some motor skills have been applied.

After applying some of the statistical procedures, in fact the T-test in independent groups, it has been certified that after a programmed training period of time of 15 minutes ergo bicycle ride with 30 circulation per minute with a load of 25 W, as an additional aerobic exercise at every training session of three-months, there is a significant statistical change at the applied motor variables, which evaluate the speed of the motor duties. However, we can come to the conclusion that in the handball game programmed trainings are very important, which in these ages should be completed with aerobic character, because these trainings not only have an effect on aerobic capacity but also can speed up the motor skills of agility and coordination.

References

Bompa, T.O. (1993). Periodization of strength – the new wave in strength training. Toronto: Veritas Publishing Company.

Demir, M. (1998 a). Rast rukometaša kadetskog uzrasta i fleksibilni grupni pristup u razvoju i usmjeravanju njihove opšte fizi fizičke pripreme, Sport u teoriji i praksi, 2, 37-43.

Delija, K., Šimenc, Z., & Vuleta, D. (1995). Razlike u nekim općimi situacijskim testovima motoričkih sposobnosti rukometaša i nerukometaša. Kineziologija, 27(1), 57-61.

Gajović, A. (2009). Fizička razvijenost i fizičke sposobnosti dece osnovnoškolskog uzrasta. Beograd : Republički zavod za sport.

Gajović, A. (2009). Fizička razvijenost i fizičke sposobnosti dece osnovnoškolskog uzrasta. Beograd :Republički zavod za sport

Malacko, J. (1986). Osnove sportskog treninga. Beograd: Sportska knjiga.

Matković, B., Knjaz, D., i Ćosić, B. (2003). Smijernice fizičke pripreme u košarci.Međunarodni znanstveno – stručni skup. Kondicijska priprema sportaša. Zbornik radova, 390 – 394, Zagreb.

Perić, D. (2001). Statističke aplikacije u istraživanjima sporta i fizičkogvaspitanja. Beograd: Fakultet sporta i fizičkog vaspitanja.

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