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EXAMINATION OF ADOLESCENTS' RESPONSES TO THE BASIC BASKETBALL TRAINING

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Abstract

Purpose: In the study, it is aimed to examine influence of 12 weeks basic basketball training on some physical characteristics of boys.

Material and method: Study; 9–14 - year old 20 boys of experimental group (E) and 9–14-year old 20 boys of control group (C), that is, total 40 volunteers from Konya Private Bahçeşehir College's basketball school participated in study. Influences of 12 weeks basic basketball training applied in study was attempted to be determined by jump, standing long jump, flexibility, speed and equilibrium levels.

Result: After application, it was seen that there has been an important increase in Height and Body Weights ($p>0.05$) of groups C and E and that there was no difference in jumping and equilibrium features. It was determined that long jump, flexibility and speed characteristics of Group E significantly developed and that development in Group C was insignificant. When looked at the difference between two groups, it was found that speed development in Group E was more significant than Group C ($p>0.05$), but there was no significant difference in physical parameters. Minitab package program was used in doing statistical analysis of data. Measured parameters, mean values and standard errors of all the volunteers were calculated. Independent-samples "t" test was used in determining difference between groups and paired-samples "t" test in groups.

Conclusion: As a result, it could be said that 12 weeks practice was effective on the physical characteristics of boys in adolescence period, but compared to the children in the same period, this influence remained unimportant.

Key Words: Adolescent, Basketball, Physical Characters

Introduction

Sportive games aim to develop physical properties like endurance, strength, speed, skill and dynamism in a desired way by starting from youth and with oriented work, and to bring a superior level by reinforcing in adolescence. (S. Mengütay, 1999). Ball games require comprehensive skills including physical, technical, mental and tactical features. Accordingly, in order to be able to perform defense and attack skills in the game, players must especially have physical skills. These skills are considerably significant to win a basketball game (N. Tusunawake, Y. Tahara, K. Moji, 2003).

Basketball sport also requires technical and tactical operations in a disciplined manner besides strength, speed, endurance, skill and dynamism having been developed from childhood and youth. Application arduousness of technical and tactical elements in immediate and fluctuant positions in the game is also a significant factor in development of features like coordination-reaction. Fundamental movements, as we call the foundation of basketball, are the applications that every player is to learn (J.V. Krause, 1996).

Those are the periods that low density initial trainings for aged 6-10 before puberty, basic sportive formations in aged 11-14 puberty period, then aged 15-18 special trainings at the end of puberty and as to adulthood, high performance trainings are performed (H.A. Pekel., L. Aydos, M. Onay, 2006). The aim of this study is to research 12-weeks application in terms of the effects of physical properties (height, weight, vertical jump, standing double-leg long jump, flexibility, 20-meter sprint, flamingo) of male children aged 6-14 who started basketball as beginners collating them with sedentary in the same age group on development of children.

Material

Total 40 male children took part in the research voluntarily as experimental group, age average of which is 9,65±2,27, and control group age average of which is 9,75±2,26 and playing basketball in twelve weeks period, registered in Konya Private Bahçeşehir College's basketball school. Measurements related with the research were performed in Konya Private Bahçeşehir College Facilities.

Experimental group: 20 male children who started basketball as beginners and playing basketball only for twelve weeks participated voluntarily. After registration works of the experimental group, required negotiations were performed and primary measurements (pre-tests) were taken. After twelve weeks training program of basketball schools, second measurements (post-tests) were taken.

Control Group: Sedentary 20 male students were chosen as control group voluntarily. First measurements (pre-tests) were taken together with the experimental group. And control group only participated in 40-min./week Physical Education Lesson applications during that time.

Method

Training Program

Students were subjected to trainings for twelve weeks under the name of basketball school and these exercises were performed as 1,5 hour/day and 2 days/week. Students were trained by group coaches. The extent of the trainings was generally consisted of basic techniques, equilibrium ability, game info and educational games. In these trainings in which basic techniques of basketball were infused; various competitions such as standing, ball handling, basic passing techniques, dribbling, turnstile, chute, deception, pick, backfield, game rule info, educational games and display of learnt techniques were applied.

Measure of body height and weight

Body heights of the volunteers who participated in the research were measured with height scale branded Holtain and 0.01 sensitivity. Body weights were determined with Tanita TBF 410 (made in Japan).

Vertical jump measure

Subjects were asked to jump above with maximum strength after completing quick knee bending down as akimbo on normal upright posture. Distance was measured and evaluated with cm type in vertical jump test.

Standing double-leg long jump measure

The aim of this test is to determine the strength of the person. The sportsman performed two jumps afoot on a fixed point without speed. At the end; the best ratings of two jumps were accepted and written as cm.

Flexibility measure

It was performed with 0,83 Wells Sit and Reach test. The furthest point was taken by knees on the measure table, sitting adjacent and perpendicular; with two hands, bending three times. A short break was given and second trials were performed. The best ratings were saved from both results and enounced with cm numbers in parts drawn on measure table.

20 M. Sprint measure

In 20 m. section, two photocells were positioned in score and finish lines. Applicant started to run behind 1 meter from the score line of his own accord. Passing the score line, electronic chronometer started. In the moment he passed the finish line, electronic chronometer stopped. Gained results were saved.

Flamingo (right-left) Equilibrium Test

Intending to determine static equilibriums of the research group, Flamingo Equilibrium Test was used. According to this test, the research group members balances himself stepping on wooden equilibrium tool 3 cm. in width, 4 cm. in height and 50 cm. in length via dominant leg, twists his foot from knee, pulling it through hip and holding it with the hand on the same side. Standing in balance with one foot in this position, time starts and tries to keep this balanced position for 1 minute. If the balance is disrupted (delivering the foot while holding, falling from the wood, touching somewhere with any of his body parts and etc.) then the time is paused. When the research group ascends to the wood and balances him again, the time continues. This test continues for 1 minute in that way. When the period is completed, every balance attempts of the research group are counted (after falling) and this number is saved as the score of the research group at the end of the test.

Data Analysis

According to the order of normality, parametric tests were used for data that shows normal distributions. Comparison of pre and post test values of the subjects was made with Paired Samples t-test, as for inter-groups comparisons, Independent Sample t-test was used.

Results

Table 1. Some physical measures of the control and experimental groups before and after education

Variables			N	Ave.	s.s	t	p
Height	**Experimental**	Pre test	20	138,25	15,15	6,038	**,000**
		Post test	20	141,30	14,29		
	Control	Pre test	20	138,65	13,19	8,143	**,000**
		Post test	20	141,50	13,71		
Weight	**Experimental**	Pre test	20	40,30	17,34	3,404	**,003**
		Post test	20	41,75	17,68		
	Control	Pre test	20	39,25	12,97	2,557	**,019**

		Post test	20	39,90	12,66		
Vertical Jump	**Experimental**	Pre test	20	20,45	7,29	,044	,966
		Post test	20	20,50	6,25		
	Control	Pre test	20	21,60	5,79	1,437	,167
		Post test	20	23,20	5,76		
SDLLJ	**Experimental**	Pre test	20	128,45	20,34	3,236	**,004**
		Post test	20	134,45	22,18		
	Control	Pre test	20	130,95	20,95	1,132	,272
		Post test	20	133,65	20,92		
Flexibility	**Experimental**	Pre test	20	18,20	5,42	3,327	**,004**
		Post test	20	18,65	5,37		
	Control	Pre test	20	19,35	4,34	,525	,606
		Post test	20	19,45	4,66		
20m sprint	**Experimental**	Pre test	20	5,47	1,28	4,788	**,000**
		Post test	20	4,83	1,18		
	Control	Pre test	20	5,38	,91	1,101	,285
		Post test	20	5,54	1,04		
Flamingo right	**Experimental**	Pre test	20	17,80	21,39	,710	,486
		Post test	20	18,28	23,73		
	Control	Pre test	20	10,47	9,97	1,247	,227
		Post test	20	10,34	9,74		
Flamingo left	**Experimental**	Pre test	20	10,01	11,20	,516	,612
		Post test	20	9,92	11,13		
	Control	Pre test	20	9,41	8,45	,734	,472
		Post test	20	9,09	9,26		

Analyzing the table, a significant difference in height and weight values p<0,05 of the Control group was observed. While having significant difference in height, weight, sdllj, flexibility and 20 m. sprint values of the experimental group; there could not be found any significant difference in vertical jump, flmg right and left values.

Table 2. Comparison of some inter-group physical measures of Pre Test and Post Test groups

	Variables		**N**	**Ave.**	**s.s**	**t**	**p**
Height	**Pre test**	Control	20	138,65	13,19	,103	,919
		Experimental	20	138,25	15,15		
	Post test	Control	20	141,50	13,71	,052	,959

		Experimental	20	141,30	14,29		
Weight	**Pre test**	Control	20	39,25	12,97	,281	,782
		Experimental	20	40,30	17,34		
	Post test	Control	20	39,90	12,66	,481	,636
		Experimental	20	41,75	17,68		
Vertical Jump	**Pre test**	Control	20	21,60	5,79	,619	,543
		Experimental	20	20,45	7,29		
	Post test	Control	20	23,20	5,76	1,690	,107
		Experimental	20	20,50	6,25		
SDLLJ	**Pre test**	Control	20	130,95	20,95	,446	,661
		Experimental	20	128,45	20,34		
	Post test	Control	20	133,65	20,92	,128	,900
		Experimental	20	134,45	22,18		
Flexibility	**Pre test**	Control	20	19,35	4,34	,725	,477
		Experimental	20	18,20	5,42		
	Post test	Control	20	19,45	4,66	,475	,640
		Experimental	20	18,65	5,37		
20m sprint	**Pre test**	Control	20	5,38	,91	,319	,753
		Experimental	20	5,47	1,28		
	Post test	Control	20	5,54	1,04	2,278	**,034**
		Experimental	20	4,83	1,18		
Flamingo right	**Pre test**	Control	20	10,47	9,97	1,438	,167
		Experimental	20	17,80	21,39		
	Post test	Control	20	10,34	9,74	1,434	,168
		Experimental	20	18,28	23,73		
Flamingo left	**Pre test**	Control	20	9,41	8,45	,218	,830
		Experimental	20	10,01	11,20		
	Post test	Control	20	9,09	9,26	,298	,769
		Experimental	20	9,92	11,13		

Analyzing the table, no significant difference on height, weight, vertical jump, sdllj, flexibility, 20 m. sprint and flamingo right and left values, compared with 1st measurements (pre-test) of experimental and control groups, was observed ($p>0,05$). Compared with 2nd measurements (post-test) of experimental and control groups, the control group was ascertained as significantly low in pursuant of experimental group ($p<0,05$).

Dıscussıon and Conclusıon

In the study, the height average of experimental group after first measure (pre-test) was determined as 138.25 cm ± 15.15, in the second measurement (post-test) 141.30 cm ± 14.29, and the height average of control group in the first measurement was 138.65 cm ± 13.19, in the second measurement 141.50 cm ± 13.71. These values were considered to be significant statistically ($p< 0.05$). These findings are supported with the study findings by Ö. Hamamioğlu and Y. Kaya (2008) in which significant difference exists on height in the pre and post tests of experimental groups which were performed for children aged 7-12 of basketball education applied for 6 weeks. In the study performed by G. Büyükyazı, and Y. Sevim (2000), height averages of experimental and control groups were determined as 155.21 cm and 156.14 cm. before trainings for 11 weeks applied to 14 male basketball players aged 13-14. As for the second measurements of the subjects committed at the end of 11 weeks, height averages were statistically considered insignificant ($p>0.05$). In the study in question, while trainings, insignificancy of which was made, were commented as having no effect on height averages, inconsiderable changes observed between pre-test and post-test can be expounded as a result of natural growth of that age group. In our study, all the differences between pre and post test measurements of the groups are not advisable to be connected only with exercise trainings. Because the main feature of this age group is their presence in a development period observed clearly (D.A. Bailey, R.M. Malina, R.L. Mirvald, 1986). It is possible to comment that the increase of height average in children is the reflection of the time passing from birth to maturity (S. Mengütay, 2000). The significant increases of height and weight values of children are notified as the development belonging to childhood and adolescence periods. However, it is notified in certain studies that exercise trainings may also have contributions in increases (U. Yörükoğlu, M.Koz 2007, P. Bale, J.L. Mayhew, F.C. Piper et. al. 1992, R.M. Malina, C. Bouchard 1991).

In the study, the weight average of experimental group after first measure (pre-test) was determined as 40.30 kg ± 17.34, in the second measurement (post-test) 41.75 kg ± 17.68, and the weight average of control group in the first measurement was 39.25 kg ± 12.97, in the second measurement 39.90 kg ± 12.66. These values were considered to be significant statistically ($p< 0.05$). These findings show parallelism with the studies in which P.B. Watts, L.M. Joubert, and A.K. Lish, J.D. Mats, B. Wilkins (2003) stated there were significant differences between height and weight in the same age group that studied and did not study regular sport education, and in which D.D. Backous, J.A. Farrow, K.E. Fridel (1990) stated there were significant differences in terms of weights of male adolescents who performed and did not perform regular exercises. In addition to showing parallelism with the study findings of Ö. Hamamioğlu, Kaya (2008), U. Yörükoğlu, M. Koz (2007), it displays contrast with the study findings of İ. Yazarer, Y. Taşmektepligil, Y.S. Ağaoğlu, F. Albay (2004) ve G. Büyükyazı, Y. Sevim (2000) in which no significant difference was observed in average of weight. Height and weight are notified to be used in determination of especially development periods and general health environments, and being a physical measurement; besides having effects of nutrition, environmental and genetic factors on development (V.A. Kanungsukkasen 1983).

In the study, while vertical jump values of the sportsmen comprising experimental group are 20.45±7,29 before the application, post-application values (post-test) are 20.50±6.25. While vertical jump values of the sportsmen comprising control group are 21.60±5.79 before the application, post-application values (post-test) are 23.20±7.76. Results were not considered as significant statistically ($p>0,05$). Having not been seen any significant change on vertical jump values observed between measurement values are considered to be stemmed from exiguity of training time, and being relatively technical based and applied as a game of the training program performed. It can be said that general increase in values takes form according to general growth factor, and training effect of which is low. Between pre-test values of experimental and control groups performed by Ö. Saygın, Y. Polat, K. Karacabey (2005) for male children aged 10-12, it was notified that there was not come across any significant difference between vertical jump parameters.

Consequently, the fact that the basic basketball program applied for 12 weeks have no significant effect on adolescents can be attested with similar results of control group used in the study and researches and besides with normal growth and development period of the children showing changes in physical properties.

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