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The Examination of Effect on Anthropometric Characteristics and Motor Activities of Infrastructure Training at Volleyball

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Abstract

Purpose: The examination of changes at some anthropometric characteristics and motor activities of volleyball players placing 10-12 age categories by infrastructure trainings performed periodically.

Method: The twenty-nine soccer players from soccer school of Ordu Telekom Sport Club at Altınordu district of Ordu province joined to this study. The volleyball players performed trainings half-weekly throughout thirty-sixweek. Pre-test and post-test values of height, weight, triceps, suprailiac, subscapula and abdomen fat, biceps flexion and extension, chest, abdomen, hip, thigh and calf circumstance, upper extremity, upperarm, forearm, inferior extremity, thigh and leg length were measured by anthropometric measure set and fat percentage of body (BF%) and body mass index (BMI) were calculated by Yuhaz formula. The 20 m. sprint, ball throwing, standing long and vertical jump and flexibility tests were done as motor activity tests by Newtest test system. The difference between pre-test and post-test values was determined by Wilcoxon test at SPSS package programme.

Results: The significant differences between pre-test and post-test, biceps flex, biceps ext, chest, abdomen, leg, hip and calf circumstance, inferior extremity and leg length, fat percentage of body (BF%), body mass index (BMI), vertical jump, horizontal jump, 20 m. sprint, flexibility and ball throwing values were determined ($p<0.05$).

Conclusion: It was determined that volleyball infrastructure trainings performed periodically at children volleyball players placing at 10-12 age categories developed anthropometric characteristics, basic motor activity and performance values of them.

Keywords: Volleyball, anthropometric characteristics, motor activities

Voleybol Altyapı Antrenmanının Antropometrik ve Motorik Özellikler Üzerine Etkisinin İncelenmesi

Özet

Amaç: 10-12 yaş grubu voleybolculara belirli periyotlarda yapılan alt yapı çalışmaları sonucunda bazı antropometrik ve motorik özelliklerinde meydana gelen değişimlerin incelenmesidir.

Yöntem: Araştırmaya Ordu Telekom Spor Kulübünün 23 oyuncusu katılmıştır. Çalışmalar haftada 2 gün toplam 36 hafta sürmüştür. Çalışmaların başında ve sonunda olmak üzere; boy, vücut ağırlığı, triceps, suprailiac, supscapula, abdomen yağ, biceps fleksiyon-ekstansiyon, göğüs, karın, kalça, uyluk, kalf çevre, üst ekstremite, üst kol, ön kol, alt ekstremite, uyluk ve bacak uzunluk, Vücut Yağ Yüzdesi (VY%) ile Beden Kitle İndeksleri (BKİ) Yuhaz Formülü ile hesaplanmıştır. Motorik özellikler bakımından, Newtest Sistem testleri kullanılarak, 20 m sürat (m/sn), top fırlatma testi, durarak uzun atlama, dikey sıçrama ve esneklik ölçümleri yapılmıştır. Verilerin analizi, grupların ön test ve son test değerlerine bakılarak SPSS programında Wilcoxson testi ile yapılmıştır.

Bulgular: Göğüs, biseps fleksiyon, biseps ekstansiyon, karın, kalça, uyluk, kalf çevre, alt ekstremite, uyluk uzunluk, Vücut Yağ Yüzdesi (VY%) ile Beden Kitle İndeksleri (BKİ), uzun atlama, dikey sıçrama, 20 m sürat, esneklik ve top fırlatma testi ön ve son test sonuçlarında anlamlı farklılık tespit edilmiştir ($P<0,05$).

Sonuç: Belirli periyotlarda uygulanan voleybol altyapı çalışmalarının, 10-12 yaş grubu çocuklarda gerek antropometrik ölçümler gerekse temel motorik özellikler açısından olumlu yönde gelişmeler sağladığı ve performans değerlerinde artışa neden olduğu saptanmıştır.

Anahtar Kelimeler: Voleybol, Motorsal Testler, Antropometrik Ölçüm

Introduction and Objectives

One of the main features of childhood is that growth and development taking place in this period. The physiological characteristics of child athletes, investigation independent of the growth and development period can lead to misleading results. Growth and development properties which vary during childhood and adolescence, the creation of child athletes' physiological standard of performance in the interpretation of test results and should be considered in talent (Kosar and Demirel, 2004).

Balls made sports physical, technical and requires a comprehensive mental and tactical skills encompassing capabilities. Among them, the player's physical ability to affect their game tactics and team intelligence significantly. Because days requires repeated maximum effort. Therefore, players to make quick and powerful movements and long term to make a strong offensive and defensive capabilities to aerobic and anaerobic capacity must have the physical ability (Sozen, 2012).

The purpose of the volleyball training will be conducted in children and young people, creating a solid foundation systematically versatile, athletic performance is to improve the ability of the child on this basis. To make a successful volleyball for adults ages from childhood onwards should be lived their specific learning circuit. This study is a comprehensive study of circuits containing a long learning process and is determined by the characteristics shown in certain biological developmental stages of the child (Rose, 2009).

In this study, as a result of infrastructure work carried out in the 10-12 age group volleyball periodically to examine the changes that occur in some anthropometric and motor characteristics.

Method

Research Army Telekom Sports Club participated in the 23 player. The study lasted for a total of 36 weeks 2 days a week. To the beginning and end of the study; height, weight, triceps, suprailiac, supscapul, abdomen fat, bicepsfleksiyo-extension, chest, abdomen, buttocks, thigh, calf circumference, upper extremity, upper arm, forearm, lower extremity, thigh and leg length, body fat percentage (BF%) and body mass index (BMI) was calculated with the formula Yuhaz.

In terms of motor skills, using Newtest system tests, 20 m speed (m / sec), ball throwing test, standing long jump, vertical jump and flexibility measurements were made. Data analysis, looking at the group of pre-test and post-test values wilcoxson test was performed with SPSS.

Findings

Study results are shown below.

Table 1. Age of subjects participating in the study Height, Weight, anthropometric and showing a motoric specifications table

Variables	PRE-TEST		FINAL TEST		P
	N	X±S.S	N	X±S.S	
Age	23	10,04±1,69	23	10,04±1,69	
Height (cm)	23	1,47±9,72	23	1,49±12,85	0,484
Weight (kg)	23	42,9±12,41	23	40,70±12,17	0,693
Top Ext. Length (cm)	23	33,32±3,83	23	33,10±2,22	0,974
Upper Arm Dist. (Cm)	23	28,10±2,91	23	28,54±2,71	0,246
Forearm Dist. (Cm)	23	21,58±2,12	23	21,39±1,16	0,820
Arm Length Dist. (cm)	23	49,69±4,73	23	50,15±5,37	0,670
Old Sport. Dist. (cm)	23	83,54±6,91	23	77,89±8,54	**0,005**
Upper leg. Dist.(Cm)	23	44,34±3,91	23	40,84±3,78	**0,004**
Old legs Dist. (Cm)	23	39,04±3,44	23	37±5,69	0,081
Breast environment. (Cm)	23	56,06±7,81	23	71,21±8,16	**0,001**
Bicepsflex enviroment. (cm)	23	16,54±6,38	23	22,05±3,27	**0,000**
Bisepsext enviroment. . (cm)	23	16,08±6,51	23	20,78±3,01	**0,002**
Abdominal enviroment.. (cm)	23	53,45±9,59	23	66,86±9,32	**0,007**
Gluteus enviroment . (cm)	23	62,26±13,96	23	78,19±9,06	**0,004**
Trans thigh. (cm)	23	29,32±11,25	23	41,93±5,20	**0,000**
Kalf Trans. (cm)	23	22,39±8,58	23	29,71±3,67	**0,000**
BMI (kg/m^2)	23	19,29±3,81	23	17,89±3,42	**0,000**
Body Fat Percentage	23	14,51±5,48	23	12,22±4,88	**0,039**
Vertical jump (cm)	23	19,86±4,10	23	23,95±5,61	**0,02**
Long Jump (cm)	23	144,09±14,26	23	165,09±25,85	**0,009**
Throwing the ball (cm)	23	157,17±52,32	23	187,17±51,62	**0,041**
Flexibility(cm)	23	15,08±7,72	23	23,91±5,78	**0,001**
Running Speed (sec)	23	4,14±0,25	23	3,96±0,44	**0,042**

Results and Discussion

According to the results of the study, the chest obtained after 36 weeks, bisepsfleksiyo's, bisepsekstansiyo the abdomen, hips, thighs, calf circumference, lower extremity, thigh length, body fat percentage (BF%) and body mass index (BMI), long jump, vertical jump 20 m, speed, flexibility and ball throwing test results were identified as significant differences in anthropometric and motor skills before the volleyball training period (P <0.05).

As a result, pre- and post-test analysis of the group we take measurements, VY terms of% 0,039, for the UN, 0,000, vertical jump, 0.02, long jump, 0,009, ball throwing, 0.041, flexibility, 0,001 and in terms of running speed 0.042, P <0 There were statistically significant differences in the 05 level.

When the volleyball players who participated in the study anthropometric measurements assessed lower extremity and in terms of upper leg length measurements of 0,005 and 0,004, Gous environmentally 0,001, bisepsfleksiyo the environment 0,000, extension environment 0.002, abdominal circumference, 0,007, hip circumference, 0.004, thigh and calf circumference, 0.000, P <there were significant differences at the 0.05 level.

Hiristov and his colleagues in 2009 to 72 female participants aged 14-15, young volleyball players were examined in the study on the examination of motoric abilities structure similar to ours, and anthropometric measurements were significant differences in performance.

Gunay and his friends in 2011, the 12-14 age group are not athletes on his 55 students, male and female students in the study of the physical and motoric abilities, athletes and non girls' body fat percentage, speed, significant differences at the 0.05 level in terms of flexibility and strength tests There were no differences were found and agility test aminohydroxamic. In our study, we take measurements before and after exercise and found significant differences were observed due to the similarities in this respect.

In studies in the literature, age group motoric features and antropometrik measurements between the groups and before-after studies in belrlen parameters were significant differences in line with exercise (Mikic, 2011, Zafirovski in 2013, Koc et al, 2006, attentiveness, 2009, Ağaoğlo et al 2008, Zafiro et al, 2009).

Ibish et al., (2004) 12-14 age group in a study that was done on children, an 8-week football training effects were investigated. After the children's research stature, body weight, anaerobic power, flexibility, resting heart rate and significant improvements in systolic blood pressure was determined. 16 weeks in another study of activity on children between the applied football training 12-14 years of age, size according to the value before the children of the training period, anaerobic endurance, sit-ups, push-ups, in significant amounts in the balance and 30 meters sprint worth has been reported that the recovery.

(Larger et al., 2009). 7-12 age group children performed a 16-week football training their children's physical fitness in another study to investigate the effects on children flamingo balance test, disks touch test, flexibility, standing long jump, 30 seconds shuttle test, twisted handle testing, 10x5 meter shuttle run test and were significant improvements in the durability test result of 1,500 meters (Sirinkan, 2010). The results of this study are similar to the results obtained from our study.

Particularly rapid increase in individual-sized teenage girls in terms of average height of 7 cm in men and 10 cm longer in length with an average (Astandrat and Rodalh, 1977; Maline,

1993). During this period, if supported by the rapid increase in size considered appropriate physical activity may increase above these average values. Exercises made during childhood and adolescence next year with these individuals to gain the exercise habits will allow experienced the positive effects of exercise.

Volleyball infrastructure projects implemented in certain periods, it was found that the 10-12 age group both in terms of anthropometric measurements in children should be provided with basic motor skills develop positively and caused an increase in performance value.

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