

## THE COMPARISON OF SOME PHYSICAL AND PHYSIOLOGICAL PARAMETERS OF FOOTBALLERS

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### ABSTRACT

In this study, it's to aim for comparison of some physical and physiological parameters of footballers at The Erenler Sport Team and Didim Municipality Sport Team. Thirty volunteers sportsman from each two teams joined to this research. It's measured the values of age, weight, length, flexibility, balance, power of left-right handgrasping, power of back, power of leg and vital capacity of sportsmans at this research. The diversity between findings were evaluated by using with "T Test" on computer with program SPSS 20. At measurement, each physiological factor was evaluated statically at the level of meaningfulness  $p < 0.05$  and  $p < 0.01$ . In conclusion, when it's found the meaningful difference on the level of age, flexibility, balance, power of left-right handgrasping, power of back, power of leg and vital capacity among footballers, it's not obtained the difference on level of length and kilos.

### KEYWORDS

Football, Physical and physiological parameters

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### Introduction

Football, is the discipline of sport which has got the serial speed of efforts aerobic and anaerobic, the force, the agility, the flexibility, the elasticity, the stability, the durability muscular and cardiorespiratory, the coordination, etc, influence highly together on performance (Akgün,1992). Because of being easy and enjoyable of playing football, Football is the favorite sport of youngs with the values psychological, social, physical and pedagogical (Koç,2006). It's the real that the football among professional sports branches transforms the industry with grand budgets in our country. Plenty of fans of teams of football hopes continually the sportif success. Teams of football need constant changement and evolution physical, physiological, mental, technical and tactical for meeting expectations. The success and productivity of footballer depends on most of factors. The football is the branch of sport which includes high violence,

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interval training, durability, rapid sprints, ability of ball, coordination, stable deciding and balance (Agostini,1994). The determination of characteristics physical and physiological is very important for increasing performance. The body has got the ability in harmony with intense physical movement structural and functional. The science of training presents the importance that this harmony is realized at the end of the special exercises for developing the ability of special performance (Sevim, 1997). The science of training determines generally the principles durability of individual and increase of capacity. The main aim of training is to prepare conditions of competition with high performance and to develop abilities psychological, physical, intellectual and the technical-tactical conditions which has got basic factors of the team and the individual. At the another words, the aim of training programs is to advance the footballers of the ability physical and physiological (Yamaner,1990., Eler1996.,Rhodes 1986). The training of football occurs the exercises planned, programmed and continuous for advance the level of special performance (Günay, 1996). During a competition of football, the man footballer runs approximately 11 km at average of 165 pulse/ minute (Ekblom, 2003). The percent of 12-15 of this activity has got the maximal exercise, %82-85 has got the submaximal exercise (Lobnes, Garrett, 1996., Ekblom, 2003). In sport, the exercises relying on basics scientific of regular and interval training develop both muscle strength, durability, rapid and flexibility and arrange the bodily composition (Kartal, Günay, 1995). The effective training includes the methods physical which are suitable for body, and also includes the needs physical and physiological of branch of sport (Günay, 1993). The footballer must be prepared for use own's athletic structure at the optimal level and for reach at the maximal level whichever position (Uğraş,Özkan.2002). It's needed at following the parameters physical and physiological of footballers for demonstrate performance at the top level and for organize the degrees of density, violence, and frequency of training. Therefore, interval training with these criterions causes both to help to coach and footballer and to increase the success sportif.

In this study, it's aimed on comparison with some physical and physiological parameters of two separate football teams ( age, kilo, length, flexibility, power of left-right hand grasping, power of back, power of leg and vital capacity of sportsmans.

## **Materials and methods**

### **Research methods**

30 volunteer footballers, at the average's of age,  $24,40 \pm 3,942$  and  $20,20 \pm 3,098$ , participate on this research. It's explained that the necessary informations before testing.

### **Length and weight**

The length of volunteers with naked foot is measured by NAN (length measurement), the weight of them with shorts and with naked foot is measured by Casio Weighting Scale (weight measurement electronic).

### **Flexibility**

At measurement of flexibility, it's used test of sitting-reaching. Footballers sit down on the floor and they prop up evenly their feet to the stand of table. When leaning forward, without flexing their knees, with their hands at the front of their body, they push slowly the ruler stretching to forward at the maximal level. At the farrest point, they waited 1-3 seconds without yawning forward and backward. The test was repeated two times and was recorded the highest value (Gökhan, Aktaş, Aysan, 2015).

### **Balance**

It's used Flamingo Balance Test (FBT) for determine the statical balance of group of research. According to test, the group of research balances by standing with dominant foot on the wooden tool of balance which has got length of 50 cm, height of 4cm and width of 3 cm; for supply stability, length of 15 cm and width of 2 cm. They grip another foot with their hand at the same direction by pulling forward to hip, flexing on knee. When the group of research is on the balance by one foot, the time starts and they try to balance during 1 minute. When the balance is lost, (if they stop clutching their

foot, if they fall to the floor, if they touch another area of their body, etc.). When the group of research move up the tool of balance, by supplying their's balance, the time go on regularly. The test go on at the some way in 1 minute. At the finishing the time, every attempt for balancing of group of research is numbered and this number is recorded as the score of group at the end of test ( Hazar, Taşmektepgil,2008).

#### Power of left-right handgrasping

It was recorded two times by taking the highest score by using Takeı Physical Fitness Dinamometer with hand.

#### Power of back and power of legand

It was recorded two times by taking the highest score by using Takeı Physical Fitness Dinamometer with back and legand.

#### Vital capacity(FVC)

It was taken the best result by taking two times with rested Spirometer by hand (Spirometer ZAN 100USB PC) at the department pulmonological of the education of research , at the hospital of University of Sakarya.

#### Findings

*The 1st tableau. Some parameters physical and physiological of footballers*

		Average	Standart Deviation	t	p
Age	Didim Municipality Sport Team	24,40	3,942	3,244	,003*
	Erenler Sport Team	20,20	3,098		
Kilo	Didim Municipality Sport Team	75,13	6,424	1,473	,152*
	Erenler Sport Team	72,09	4,782		
Length	DidimMunicipality Sport Team	1,7973	,07497	1,577	,126*
	Erenler Sport Team	1,7600	,05278		
Flexibility	Didim Municipality Sport Team	35,60	4,067	2,094	,045*
	Erenler Sport Team	29,83	9,874		
Balance	Didim Municipality Sport Team	1,93	1,033	-5,169	,000**
	Erenler Sport Team	6,13	2,973		
Power of right hand-grasping	Didim Municipality Sport Team	50,633	5,1858	4,995	,000**
	Erenler Sport Team	40,727	5,6661		
Power of left hand- grasping	DidimMunicipality Sport Team	48,660	4,4497	4,534	,000**
	Erenler Sport Team	40,120	5,7808		
Power of back	DidimMunicipality SportTeam	136,100	5,4863	2,496	,019*
	Erenler Sport Team	120,533	23,5277		
Power of legand	DidimMunicipality Sport Team	149,607	6,9819	4,132	,000**
	Erenler Sport Team	119,180	27,6535		
Vital capacity	Didim Municipality Sport Team	5,573	,1438	5,100	,000**
	Erenler Sport Team	4,841	,5375		

\*p<0.05\*\*p<0.01

According to the first tableau, The levels of age, flexibility, ( $p < 0.01$ ), balance, power of right-left handgrasping, ( $p < 0.01$ ), power of back ( $p < 0.05$ ), power of legand and vital capacity, ( $p < 0.01$ ) have got a meaningful diffirences; it wasn't identified the meaningful differences on the levels of kilo and lenght( $p < 0.05$ ).

### Argumentation

At this research, it was used as test subject the 30 volunteers footballers and was investigated some physical and physiological characteristics. The values of age, flexibility, balance, power of right-left handgrasping, power of legand, vital capacity ( $p < 0.01$ ), power of back( $p < 0.005$ )of footballer were identified the meaningful diffirence; the value of kilo and lenght ( $p < 0.05$ ) of them wasn't found the meaningful difference.

In the research, the 30 volunteers footballers at the Didim Municipality Sport Team participated. They have got the average of age  $24,40 \pm 3,942$  year, the average of  $75,12 \pm 6,424$  kg, the average of lenght  $1,7973 \pm 0,07497$  cm; The volunteers footballers of the Erenler Sport Team have got the average of the age  $20,20 \pm 3,098$  year, the average of kilo  $72,09 \pm 4,782$  kg, the average of lenght  $1,7600 \pm 0,05278$ . The values of researches of Aslan and feat.(2010) and Taşkın (2006) are parallel to the values of age, lenght and weight. The research of Akçınar and feat. (2009) found the average of age of professional footballers  $25,29 \pm 4,28$ . Yamaner and Hacıcaferoğlu (1997) found respectively average of age of three diffirent team's  $24,15 \pm 2,72$  year,  $25,50 \pm 4,00$  year and  $25,10 \pm 4,02$ . The research of Kürkçü and feat.(2009) found the meaningfulness difference between lenght and weight.

In this research, it was found the value of flexibility  $35,60 \pm 4,067$  cm of footballers of Municipality of Didim Sport Team; footballers of Erenler Sport Team has got the value of flexibility  $29,83 \pm 9,874$ . The research of Aslan (2015) was found the value of  $27,81 \pm 6,14$ . The average of flexibility of the champion of the star basketball team in Turkey was identified  $8,3 \pm 2,7$  cm by Kuter and Öztürk (1992). Saygın and feat.(2005) identified  $16,25 \pm 6,24$  the average of flexibility of children between 10-11 ages. The average of flexibility of volunteers is more higher than Kuter and Saygın's averages. When it's found  $1,93 \pm 1,033$  the values of balance of Didim Municipality Sport Team, Erenler Sport Team footballers has got  $6,13 \pm 2,973$ .

In this study, the footballers of Didim Municipality Sport Team have got  $50,633 \pm 5,1858$  the value of right hand grasping,  $48,660 \pm 4,4497$  the value of left hand grasping; the footballers of Erenler Sport Team have got  $40,727 \pm 5,6661$ ,  $40,120 \pm 5,7808$ . The research of Besler and feat. (2010) was identified  $39,9238$  the value of right-handgrasping of footballer of Tavşanlı Linyitspor, their's left-hand grasping has got the value of right hand grasping of the University of Dumlupınar is  $46,9364$ , the value of left hand grasping is  $45,8773$ .

The value of the power of back of footballers of Didim Municipality is  $136,100 \pm 5,4863$ , Erenler Sport's footballer has got  $120,533 \pm 23,5277$ . The study of Ramazanoğlu and feat.(2003) found  $136.96$  kg the value of the power of back. Emre(2000) found  $147.19$  kg the value of the power back of Niğde Spor,  $136.94$  kg the value of the power back of Bor Şeker Sport.

In the study, it was found  $149,607 \pm 6,9819$  the value of the power of legand of Didim Municipality Sport Team, the value of Erenler Sport Team is  $119,180 \pm 27,6535$ . Aslan (2015) found  $126,51 \pm 17,82$  value of the power of legand. Also, Kutlu and Karadağ (2003) found  $125,00 \pm 12,90$  kg the value of power legand of the research on the 15 footballers Uğraş ve Savaş (2005) found the value of the power of legand of the 25 footballer at the American Football Team in the University of Bilkent. The power of legand is used as the explosive power on muscles quadriceps, gastrocnemius and hamstring, jumps, strikes and returns( Reilly 1979).

In this study, it was found  $5,573 \pm 1,438$  the value of vital capacity of Didim Municipality's footballers, Erenler Sport footballers have got  $4,841 \pm 5,375$ . Erkmen and feat. (2005) found  $5.075$  the value of vital capacity at their's research. The values of capacity change according to the individual's physical and physiological characteristics and the type of sport (Heipertz 1985).

## Result

The value of age Didim Municipality footballers and Erenler Sport footballers has the meaningful difference (.003\*). The comparison of the value of kilo of Didim Municipality and Erenler Sport footballer has got meaningfulness difference (.152\* ). The comparison of the value of lenght of the Didim Municipality and Erenler Sport footballers has got meaningfulness difference (.126\*). The value of flexibility of Didim Municipality and Erenler Sport footballers has got meaningful difference (.045\*). The comparison of the value of balance of Didim Municipality and Erenler Sport footballers has got meaningful difference(.000\*\*). The comparison of the value of right hand-grasping of Didim Municipality and Erenler sport footballers has got the meaningful differences (.000\*\*).

The comparison of the value of left hand-grasping has got meaningful difference (.000\*\*).

The value of the power of back of Didim Municipality and Erenler Sport footballers has got meaningful differences (.019\*). The value of the vital capacity of Didim Municipality and Erenler Sport footballers has got meaningful difference (.000\*\*).

At the result, when evaluating all of the literature , it's pointed out that the football is sport type which has got constantly and interval training and needs the power and durability. It has got the sprint running with ball and without ball (Lemon, 1994). Every footballer needs training of ability, chagement of direction, rapidness, basic durability, etc. The footballers need also the measurement for identify their own's standarts (Gray, 1980). It's understood that it must raise the characteristics phisical and physiological by the exercises in the sport. It's shown that the exercises develop the physiological performance at this presented study.

## Offers

At the last years, it gets easy the objectif evaluations of footballer and the scientific organisations special for individual and general for team with the researches physical and physiological. This study can be used for determination of the conditional level of footballer and team, for specification of the criterions of selecting footballers and for follow the conditional evolution of footballer. We think that why raising these values, it's taken the best scores at the level of competition when footballers exercises with the best methods especially measuring constantly the values. We think also that these researchs can identify the situation of healty and disability of footballers. It can be very benefical for them. We believe the measurements physical and motoric that the more frequent measurements give the more true results, by the meaning of environmental and seasonal factors, with the more footballer's participation.

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