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Original article

EVALUATE THE PHYSİCAL FİTNESS LEVELS OF TURKİSH PRİMARY SCHOOL MALE AND FEMALE CHİLDREN BETWEEN 7-14 AGES

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Abstract

Objective. The purpose of this study was to determine and evaluate the physical fitness levels of Turkish primary school male and female children between 7-14 ages.

Method: 1955 female and 2044 male, totally 3999 students participated in this study on a voluntary basis. Height and weight were measured and subjects performed vertical jump test, sit-and-reach test and 30 seconds sit-up tests. 800 meter run and walk test for 7-11 age groups, 1600 meter run and walk test for 12-14 age groups were carried out. The data obtained from the subjects were primarily analyzed through descriptive statistics by gender and age groups, and percentage (percentiles) values were calculated between a very good-very low range. Furthermore, Two-Way ANOVA was used to analyze whether the data differentiate gender and age groups and to compare both gender-related characteristics of the same age; and One-Way ANOVA was used to determine the differences among the age groups for the same gender. Significance level has been recognized at $p<0.05$.

Results: Rapid increases in height were observed in females 9- 12, in vertical jump 11-13, in flexibility 10-12 and in sit-up 9-12 years old. While a rapid increase in height was observed in males between 9-10 and 12-14, in vertical jump between 10-14, in sit-up 9-11, decrease on flexibility was observed 9-13 years old. In this study through analysis of gender-based differences depending on age factor. The results showed significant differences between male and female student's body weight, 800- 1600 meter run-and-walk, vertical jump and 30 seconds sit-up values in favor of males($p <0.001$).

Conclusion: When all the consequences of the research evaluated, the sharp increases were observed in female student's performance at earlier ages compared with male students. On the other hand, it was determined that endurance, vertical jump and sit-up values of males were higher than the females.

Key words: primary school student, physical fitness.

Introductıon

Being inactive in daily life and changing eating habits lead to rise in incident of obesity, a current problem of our era, in all age groups. It causes wasting more time by children and adolescents such sedater activities as watching T.V, sitting in front of computer screen, playing video games in internet cafes. Growth of children depends on genetic factors, biological age, nutrition and ecological environment. Growth may be affected with regard to intensity of physical activities. Increase in intensity of physical activities in puberty and subsequently, variation in growth rate during pubertal period bring about physiologic and physical alterations. Monitoring these alterations is obtained by using physical fitness test batteries. The strength of heart- respiratory systems, muscular force and its strength, body shape and elasticity take place within the scope of physical fitness associated with health. Monitoring children's physical fitness also contributes to the preventative services of health agencies. Physical fitness and its tests reflect the relationship among the health, sport and physical activity.

The importance of schools is increasing in terms of the comprehensive evaluation of levels of physical fitness and physical activity with children and adolescents. As more and more people are evaluated, the criteria used for evaluating physical activities of children in schools may differentiate. In order to make evaluations qualified and to increase their inevitability, many countries, from past to present have worked on standardization for the purpose of determining the physical features of their own societies. Standardization studies are used in quite a few areas. The necessity of creating selection criteria for determining athletic abilities and studies on foundation in sports branches has enhanced normative studies upon children. Yet, owing to excessive physical activity intensity for school age children, rather than selecting their abilities, implementation of tests have role in scanning physical convenience at intervals and in planning new activities according to these results. AAHPERD Physical Best (U.S.A), Fitnessgram-Activitygram (Fitness Test Battery) (U.S.A), Fit Youth Today (U.S.A) ; CAHPER Fitness Performance Test II (Canadian Health, Physical education and Recreation Union) (Canada) President's Challenge (Presidential, National, or Participant Physical Fitness Award) U.S.A), Eurofit (Europe Physical Fitness Test) (Europe) tests are used within the scope of physical fitness.

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Method

Research Group:3999 voluntary human subjects that consist of 1955 female at the age of (n= 1955) (age 7 ;257, age 8;250,age 9 ;249, age 10 ; 235,age 11 ;247, age 12 ; 252, age 13 ;239,age 14 ;226) and 2044 male at the age of (n=2044) (age 7 ;243, age 8; 250,age 9 ;251, age 10 ;265,age 11 ; 252, age 12 ;248,age 13 ;261, age 14 ;274) took part in this study . In the first step, by making written and verbal explanation to the individuals incorporating in study got the individuals' parents to fill the 'voluntary countenance form'. Decision was taken by Osman Gazi Faculty of Medicine Ethics Committee with the 2012/282 resolution number as there is not any ethic inconvenience to carry out this study and students participated in this study on a voluntary basis.

In the interviews the ages of human subjects were determined as day, month, and year according to their official registry. The height measurements of human subjects were measured with Holtain Limited height measurement device while they were resting with bare feet (Sensibility 0.01m). On the other hand body weights just with short and t-short were weighed with Angel electronic weighting machine (Sensibility 0.01 kg). In the human subjects' vertical jumping tests Takai jump meter was used. Each measurement was repeated three times and the best result was saved. For the human subjects' 30 seconds sit-up tests 1/1000 sensibility timekeeper was used. The number of sit-up exercises that were repeated by subjects was saved on verse form. The elasticity measurement of subjects was measured through sit and reach tests. They stayed for 1-2 seconds in the maximum extent position. Repeating the test twice, the higher measurement score was saved . The durability of subjects, the smoothness of the surface and the length of the race track as 800 or 1600 m were determined. Racetrack length and surface features were the same for all human subjects. Students from 1.2.3.4.5 grades (age 7,8,9,10,11) started running on 800 m bowless suitable race track with Ready and Go! instruction, students from 7.8. and 9 grades (age 12,13,14) started running on 1600 m bowless suitable race track with Ready and Go! instruction . 1/1000 sensibility Casio timekeeper was used for the test. Students were free to run, jog or walk. In addition, because the aim was completed the race as quickly as possible, they were constantly motivated orally in order to run and to adjust their running speed. Test results were saved as minute and second. Moreover start and finish points were determined with signs (Cone etc.).

Data Analysis: In the analysis of data firstly according to human subjects age groups; average, standard deviation, minimum and maximum degrees of anthropometric (height, weight) and bio motor features (vertical jump, 30 seconds body sit-up and reach, 800-1600 meter jog and run test) were calculated. In order to examine whether the data obtained from human subjects were separated in terms of their sex and age groups, bilateral variant analysis which is to compare to features of different sexes at the same age groups (Two-way ANOVA) and one-way variant analysis which is to determine differences among the same sex age groups (One-way ANOVA) were done. When meaningful differences were obtained, supplementary test Tukey was used. As an end, so as to figure out anthropometric and bio motor norms of 7-14 age groups male and female students which is the main goal of the research, raw marks and marks out of 100 were calculated. In point of calculating raw marks as percentage point, Z marks were converted into T marks. As a result of this students' norm degrees were determined as quite low (0-20), low (21-40), medium (41-60), well (61-80), quite well (81-100) percentage points. SPSS 20.0 packet program was used for analyzing data. In the point of interpreting statistic process 0.05 was accepted as meaningfulness level.

Fındıngs

(Table 1. According to age groups human subjects Height Rates) Students' sex [$F_{1,3983}$ =26.225, p <0,001] and age differences affect their heights [$F_{7,3983}$= 2320,906 ; p< 0,001]. Analysis results have also shown that sex and age differences have a common effect on students' statures degrees [$F_{7,3998}$ = 9,875, p< 0,001]. According to these results male students obtained higher stature degrees in meaningful level than female students at the age of 7, 8, 10, 14. It has been shown 11, 12, 13 years old female students' stature degrees average is higher than male students. (Table 2. According to age groups human subjects Weight Rates) While students' sexes didn't affect their weight [$F_{1,3983}$ =251, p > 0,05] age factors did [$F_{7,3983}$ = 899,994, p<0,001]. Analysis results have also shown sex and age factors have an effect on body weight in common [$F_{7,3998}$ = 6,738, p< 0,001]. According to these results among male and female students for all age groups but age 12, we couldn't obtain any considerable differences in terms of body weight averages.

(Table 3. According to students' age groups Long Distance Degrees) 7-11 years old students' sex [$F_{1,2489}$ =212,745, p<0,001] and age differences affect 800 meter jog & run degrees [$F_{4,2489}$ =41,805, p<0,001]. Analysis results have also shown sex and age factors have an effect on students long distance degrees in common [$F_{4,2498}$ = 9,804, p> 0,01]. According to these results boys at the age of 7,8,9,10 and 11 obtain considerable high 800 m jog& run degrees in comparison with girls. High degree term is defined as finishing 800 m jog& run test more quickly than others. 12-14 years old students' sex [$F_{1,1494}$ = 188,559, p< 0,001] and age differences affect 1600 meter jog& run degrees [$F_{2,1494}$ = 4,009, p<0,05]. Analysis results have also shown sex and age factors have an effect on students' 1600 meter jog& run degrees in common [$F_{2,1499}$ = 5,109, p< 0,01].

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According to these results when boys are 12,13,14 years old, they obtain considerable high 1600 meter jog& run degrees in comparison with female students. High degree term is defined as finishing 800-1600 m jog& run test more quickly than others.

(Table 4. According to Students' Ages Averages of Vertical Jump and Standard Deviation Degrees) Students' sex [$F_{7,3983}$ =329,586, p<0,001] and age differences affect jump degrees [$F_{7,3983}$=394,433, p<0,001]. Analysis results have also shown sex and age factors have an effect on students' jump degrees in common [$F_{7,3999}$ = 10,082, p< 0,001]. According to these results, male students at all age groups except age 11 obtain considerable high jumping rates in comparison with female students.

(Table 5. According to Students' Ages Average Elasticity Degrees and Standard Deviation Degrees) Students' sex [$F_{1,3983}$ =55,977, p<0,001] and age differences affect elasticity degrees[$F_{7,3983}$=6,900, p<0,001]. Analysis results have also shown sex and age factors have an effect on students' elasticity degrees in common [$F_{7,3999}$ = 7,381, p< 0,001]. According to these results, it is understood that considerable differences of elasticity degrees among female and male students are in favour of female students beginning from 12 years old.

(Table 6. According to Students' Age Average 30 sec. Sit-up Degrees and Standard Deviation Degrees) Students' sex [$F_{1,3983}$ =215,284 p<0,001] and age differences affect sit-up degrees[$F_{7,3983}$= 90,850, p<0,001]. Analysis results have also shown sex and age factors have an effect on students' elasticity degrees in common [$F_{7,3999}$ = 10,810, p< 0,001]. According to these results, while there is not any considerable difference at the age of 8 and 11, among 14-13-11-10-9-7 ages, male students obtain higher sit-up degrees in comparison with female students.

Table 1. According to age groups human subjects Height Rates (cm)

Sex	Age	n	Avr.	ss	Min	Max	Percentage										
							Rather Low			Low		Medium		Well		Quite well	
							5	10	20	30	40	50	60	70	80	90	95
Female	7	257	120,3	4,7	108,0	137,0	113,0	114,0	116,0	118,0	119,0	120,0	122,0	123,0	124,0	126,0	127,0
	8	250	a***123,4	5,2	110,0	140,0	116,0	118,0	119,0	120,0	122,0	123,0	124,0	126,0	127,8	130,0	133,0
	9	249	b***130,8	5,7	116,0	144,0	122,0	123,0	126,0	128,0	129,0	131,0	132,0	134,0	136,0	138,0	140,0
	10	235	c***136,1	5,8	120,0	152,0	127,0	129,0	131,0	133,0	135,0	136,0	137,0	139,0	141,0	143,0	146,0
	11	247	d***143,0	7,2	123,0	162,0	132,0	134,0	136,0	139,0	141,0	143,0	145,0	147,0	150,0	153,0	155,0
	12	252	e***150,9	7,5	130,0	169,0	140,0	141,0	144,0	146,0	149,0	151,0	153,0	155,0	158,0	160,7	163,0
	13	239	f***154,2	5,6	135,0	170,0	145,0	147,0	150,0	152,0	153,0	154,0	155,0	157,0	159,0	161,0	163,0
	14	226	g***157,2	5,7	141,0	173,0	148,0	150,0	153,0	154,8	156,0	157,0	158,0	160,0	162,0	165,0	167,0
Male 7* 8** 10** 14***	7	243	122,3	5,1	108,0	131,0	114,0	115,0	118,0	119,0	121,0	123,0	124,0	125,0	127,0	129,0	130,0
	8	250	a***125,9	5,4	115,0	150,0	119,0	120,0	121,0	123,0	124,0	125,0	126,6	128,0	130,0	133,0	135,5
	9	251	b***131,6	6,1	118,0	155,0	122,0	124,0	126,0	128,0	130,0	131,0	133,0	134,0	136,0	140,0	143,4
	10	265	c***138,7	6,7	118,0	162,0	129,0	130,0	133,0	135,0	137,0	138,0	140,0	141,0	144,0	148,0	150,7
	11	252	d***142,8	6,4	128,0	164,0	131,7	135,0	137,0	140,0	141,0	143,0	144,0	146,0	148,0	151,0	154,0
	12	248	e***149,1	6,4	132,0	165,0	139,0	141,0	144,0	145,0	147,0	149,0	151,0	153,0	155,0	157,0	159,0
	13	261	f***153,5	8,1	134,0	176,0	140,0	144,0	146,0	149,0	152,0	154,0	156,0	158,0	160,0	164,0	168,9
	14	274	g***160,3	8,3	135,0	178,0	145,0	149,0	154,0	156,0	158,0	160,0	163,0	165,0	168,0	170,0	173,3

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Table 2. According to age groups human subjects Weight Rates (kg)

Sex	Age	n	Avr.	ss	Min	Max	Percentage										
							Rather Low			Low		Medium		Well		Quite well	
							5	10	20	30	40	50	60	70	80	90	95
Female 12**	7	257	23,3	3,6	15,0	35,0	18,0	19,0	20,0	21,0	22,0	23,0	24,0	25,0	26,0	29,0	30,0
	8	250	25,0	4,4	18,0	50,0	20,0	20,0	21,0	22,0	23,0	24,0	25,0	26,0	28,0	30,0	33,4
	9	249	b***29,2	5,1	19,0	50,0	22,0	23,0	25,0	26,0	28,0	29,0	30,0	31,0	33,0	36,0	38,5
	10	235	c***33,3	7,2	22,0	68,0	24,0	25,0	27,0	29,0	30,0	32,0	34,0	36,0	39,0	43,0	46,0
	11	247	d***37,2	7,4	24,0	65,0	28,0	29,0	31,0	33,0	34,0	36,0	38,0	39,6	43,0	48,0	52,0
	12	252	e***45,6	10,3	26,0	92,0	33,0	34,0	37,0	39,0	42,0	44,0	47,0	50,0	53,0	59,0	63,0
	13	239	f**48,5	9,5	30,0	88,0	36,0	38,0	42,0	43,0	45,0	46,0	48,0	51,0	56,0	60,0	68,0
	14	226	g***52,4	9,8	31,0	87,0	38,3	42,0	45,0	46,0	48,0	51,0	53,0	56,2	59,0	65,4	72,0
Male	7	243	24,7	3,8	18,0	39,0	19,0	20,0	21,0	22,0	24,0	25,0	26,0	27,0	28,0	29,0	31,8
	8	250	a*27,1	5,0	19,0	48,0	21,0	22,0	23,0	25,0	25,0	26,0	27,0	28,0	29,8	33,0	38,0
	9	251	b*29,5	5,2	20,0	57,0	22,0	24,0	25,0	27,0	28,0	29,0	30,0	31,0	33,0	35,0	38,4
	10	265	c***34,5	8,6	22,0	77,0	25,0	26,0	29,0	30,0	31,0	33,0	35,0	36,0	38,0	43,4	51,4
	11	252	d**37,3	7,7	23,0	69,0	28,0	30,0	32,0	33,0	34,2	36,0	38,0	40,0	41,4	46,0	51,7
	12	248	e***42,8	9,0	29,0	74,0	32,0	33,0	34,0	37,0	39,0	41,0	44,0	46,0	50,0	55,0	62,5
	13	261	f***46,6	9,8	28,0	85,0	34,0	36,0	39,0	41,0	43,0	45,0	47,0	50,0	53,0	59,8	64,8
	14	274	g***50,9	9,7	32,0	83,0	36,8	39,0	42,0	45,0	47,0	50,0	53,0	56,0	59,0	63,5	68,0

Table 3. According to students' age groups Long Distance Degrees (min/sec)

Sex	Age	Distance	n	Avr.	ss	Percentage										
						Rather Low			Low		Medium		Well		Quite Well	
						5	10	20	30	40	50	60	70	80	90	95
Female	7	800 m.	257	5,36	,18	6,12	6,06	6,0	5,36	5,30	5,30	5,24	5,24	5,18	5,12	5,06
	8	800 m.	250	5,30	,18	6,12	6,06	6,0	5,30	5,30	5,30	5,24	5,18	5,18	5,12	5,06
	9	800 m.	249	5,30	,36	6,18	6,12	6,0	5,36	5,30	5,30	5,24	5,18	5,12	4,36	4,24
	10	800 m.	235	5,36	,30	6,18	6,06	6,0	5,36	5,30	5,24	5,24	5,18	5,18	5,06	5,0
	11	800 m.	247	d***5,18	,30	6,12	6,0	5,36	5,30	5,24	5,18	5,12	5,06	5,06	4,30	4,24
	12	1600 m.	252	11,18	1,18	14,12	13,54	12,18	11,30	11,18	11,06	10,36	10,24	10,18	10,06	9,30
	13	1600 m.	239	11,48 f**	2,0	15,24	14,36	13,12	12,18	11,30	11,18	11,12	10,36	10,12	9,36	9,24
	14	1600 m.	226	g**11,18	1,54	15,54	14,30	13,12	11,18	10,30	10,24	10,18	10,12	10,06	9,36	9,24
Male 7***,8***	7	800 m.	243	5,18	,24	6,06	6,0	5,30	5,30	5,18	5,18	5,12	5,06	5,06	4,36	4,30
	8	800 m.	250	5,18	,24	6,06	5,36	5,30	5,24	5,18	5,12	5,12	5,06	5,06	4,36	4,30
	9	800 m.	251	5,24 b**	,30	6,12	6,06	5,48	5,30	5,24	5,24	5,18	5,12	5,12	5,06	4,30
	10	800 m.	265	c***5,12	,36	6,18	6,0	5,30	5,24	5,18	5,12	5,06	5,06	5,0	4,24	4,12
	11	800 m.	252	d***4,54	,36	6,0	5,24	5,18	5,12	5,06	5,06	5,0	4,24	4,12	4,06	4,06

9**,10**	12	1600 m.	248	10,30	1,12	13,18	11,30	11,06	10,36	10,30	10,24	10,18	10,12	10,0	9,12	8,30
11***,12***	13	1600 m.	261	10,24	1,12	12,24	11,36	11,12	11,0	10,24	10,18	10,06	9,48	9,24	9,12	8,24
13***,14***	14	1600 m.	274	10,18	1,24	12,36	12,06	11,12	10,30	10,18	10,06	10,06	9,36	9,30	8,48	8,24

Table 4. According to Students' Ages Averages of Vertical Jump and Standard Deviation Degrees (cm)

Sex	Age	n	Avr.	ss	Percentage										
					Rather Low			Low		Medium		Well		Quite Well	
					5	10	20	30	40	50	60	70	80	90	95
Female	7	257	21,2	5,5	12,0	14,0	16,0	18,0	20,0	21,0	22,0	24,0	26,0	29,0	30,0
	8	250	22,2	5,5	13,0	15,0	18,0	19,0	21,0	22,0	23,6	25,0	27,0	29,0	31,0
	9	249	b ***24,4	4,4	18,0	19,0	20,0	21,0	24,0	24,0	25,0	27,0	28,0	30,0	32,0
	10	235	c***28,2	6,7	17,8	20,0	22,0	25,0	26,4	28,0	30,0	32,0	34,0	37,0	39,0
	11	247	d***31,5	6,3	22,0	25,0	26,0	27,0	29,0	30,0	33,0	34,0	36,4	39,2	43,6
	12	252	31,3	6,1	21,0	23,0	26,0	28,0	30,0	31,0	33,0	34,0	37,0	39,0	42,0
	13	239	f***35,1	6,7	24,0	26,0	29,0	31,0	33,0	35,0	37,0	39,0	40,0	43,0	46,0
	14	226	33,8	7,0	22,0	24,0	27,2	30,8	32,0	34,0	36,0	38,0	39,0	42,0	46,0
Male 7***,8***, 9***,10*** 12***,13*** 14***	7	243	24,1	6,3	13,0	15,0	18,0	21,0	23,0	25,0	26,0	27,0	29,0	32,0	34,0
	8	250	25,2	5,9	14,6	17,0	20,2	22,0	24,0	25,0	27,0	28,7	30,0	32,9	35,0
	9	251	b***27,9	4,7	20,0	22,0	24,0	25,0	27,0	28,0	29,0	30,4	32,0	34,0	36,0
	10	265	c***31,1	7,6	19,0	21,0	25,2	27,0	29,0	31,0	34,0	35,0	38,0	40,4	43,0
	11	252	d*33,1	6,3	23,0	25,0	27,0	29,0	31,0	33,0	34,0	37,0	39,0	41,0	45,0
	12	248	e**35,6	5,9	25,0	28,0	30,0	33,0	34,0	36,0	37,0	39,0	41,0	43,0	44,0
	13	261	f***38,5	7,4	25,0	29,0	32,0	35,0	37,0	39,0	40,0	42,0	44,0	48,0	50,9
	14	274	g***41,7	9,3	25,8	30,0	34,0	38,0	39,0	41,0	44,0	47,0	50,0	54,0	57,0

Table 5. According to Students' Ages Average Elasticity Degrees and Standard Deviation Degrees (cm)

Sex	Age	n	Avr.	ss	Percentage										
					Rather Low			Low		Medium		Well		Quite Well	
					5	10	20	30	40	50	60	70	80	90	95
Female 12*** 13** 14***	7	257	19,2	5,4	10,0	12,8	15,0	17,0	18,0	19,0	20,0	22,0	24,0	26,2	28,1
	8	250	19,5	5,4	10,0	13,0	16,0	17,0	18,0	19,5	21,0	22,0	24,0	27,0	28,0
	9	249	17,7 b**	4,8	10,0	11,0	14,0	16,0	16,0	18,0	20,0	21,0	22,0	24,0	24,5
	10	235	19,1	5,5	9,0	12,0	15,0	16,0	18,0	20,0	20,0	22,0	23,0	26,0	28,0
	11	247	19,0	5,5	10,0	12,0	15,0	16,0	17,0	18,0	20,0	21,0	23,4	27,0	29,6
	12	252	e**20,9	6,1	10,7	13,0	16,0	18,0	20,0	20,5	22,0	24,0	26,0	29,0	32,0
	13	239	19,1 f*	6,3	10,0	10,0	14,0	16,0	17,0	18,0	21,0	23,0	25,0	28,0	30,0
	14	226	20,7	6,6	10,0	13,0	14,2	16,8	18,0	20,0	22,0	24,0	27,0	30,0	33,0
	7	243	19,4	4,8	11,0	13,0	16,0	18,0	18,0	20,0	21,0	22,0	23,0	25,0	26,8
	8	250	19,2	4,6	11,0	13,1	15,0	17,0	18,0	20,0	20,0	22,0	23,0	25,0	26,4

Male	9	251	18,1	4,9	10,0	12,0	14,0	16,0	17,0	18,0	19,0	20,0	22,0	24,0	26,0
	10	265	18,0	5,5	9,0	10,6	13,0	15,0	17,0	18,0	20,0	21,0	23,0	25,0	26,7
	11	252	17,4	5,4	10,0	10,0	13,0	15,0	16,0	17,0	18,0	20,0	22,0	24,0	26,3
	12	248	17,7	6,7	8,0	10,0	13,0	14,0	15,0	16,5	19,0	20,0	22,2	25,0	30,5
	13	261	16,9	5,3	8,0	10,0	13,0	14,0	15,0	17,0	18,0	20,0	21,6	24,0	26,0
	14	274	18,1	5,9	9,0	10,0	13,0	15,0	17,0	18,0	20,0	21,0	23,0	25,0	28,3

Table 6. According to Students' Age Average 30 sec. Sit-up Degrees and Standard Deviation Degrees.

Sex	Age	n	Avr.	ss	Percentage										
					Rather Low			Low		Medium		Well		Quite Well	
					5	10	20	30	40	50	60	70	80	90	95
Female	7	257	14,2	3,6	8,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0	17,0	19,0	20,0
	8	250	15,2	3,4	9,0	11,0	12,0	14,0	14,0	15,0	16,0	17,0	18,0	19,9	20,4
	9	249	16,2	3,6	11,0	12,0	13,0	14,0	15,0	16,0	17,0	18,0	19,0	21,0	23,0
	10	235	16,0	4,6	8,0	10,0	12,0	14,0	15,0	16,0	17,0	18,0	19,0	21,4	24,2
	11	247	[d*]17,3	4,0	10,4	12,0	14,0	15,0	16,0	17,0	18,0	19,0	20,0	22,0	25,0
	12	252	[e**]18,8	4,5	11,0	13,0	16,0	17,0	18,0	18,0	19,8	21,0	22,0	25,0	26,0
	13	239	17,2[f**]	4,5	10,0	11,0	14,0	15,0	16,0	17,0	18,0	19,0	20,0	23,0	25,0
	14	226	17,1	4,4	10,0	12,0	14,0	15,0	16,0	17,0	18,0	19,0	21,0	22,4	24,0
Male 7** 9* 10** 11*** 13*** 14***	7	243	15,7	3,5	10,0	11,0	13,0	14,0	15,0	15,0	17,0	18,0	19,0	20,0	21,0
	8	250	15,4	3,4	10,0	11,0	13,0	14,0	15,0	15,0	16,0	17,0	18,0	19,0	21,0
	9	251	[b***]17,5	3,8	12,0	13,0	14,0	15,0	16,0	17,0	18,0	19,0	20,0	22,0	24,4
	10	265	17,6	4,9	10,0	11,0	14,0	15,0	16,0	17,0	18,6	20,0	21,0	24,0	26,0
	11	252	[d***]19,5	4,1	14,0	14,0	16,0	17,0	18,0	19,0	20,0	21,1	23,0	24,0	27,0
	12	248	20,0	4,4	13,5	14,0	16,0	18,0	19,0	20,0	21,0	22,0	23,0	25,0	27,0
	13	261	20,2	4,0	14,0	15,0	17,0	18,0	19,0	20,0	21,0	22,0	23,0	25,0	26,9
	14	274	21,2	3,8	14,0	16,0	18,0	19,5	20,0	21,5	22,0	23,0	24,0	26,0	27,0

[***] P<0.001 **p<0.01 *p<0.05

[a] 8-7 [b] 9-8 [c] 10-9 [d] 11-10 [e] 12-11 [f] 13-12 [g] 14-13

All the Table - Note: If the letter is on the right of the number, it means in favour of first age group and if the letter is on the left of the number it means in favour of second age group.

Discussion

In the research undertaken by Carling and his colleagues in France on 160 male children under 14 years old, they determined males' average height as 162.02 ± 8.99 cm. Research results parallel with literature. In the study carried out by Turgut and Cetinkaya, on 776 female students attending different primary schools in Antalya, they identified average height as 123,75± 5,36 cm at the age 7, as 131,12 ±5,91 cm at the age 8, as 136,19 ± 6,29 cm at the age 9, as 141,63± 6,86 cm at the age 10, 145,03± 7,17 cm at the age 11. In the study carried by McMillan and Erdmann in Illinois , average height of girls was determined as 124 ± 6 cm (n=387) at the age 7, as 130± 7 cm (n=381) at the age 8, as 135±7 cm (n=379) at the age 9, as 141±7 cm (n=383) at the age 10, as 149±8 cm (n=409) at the age 11 and average height of boys was determined as 125±8 cm

(n=373) at the age 7, as 131±7 cm (n=370) at the age 8, as 136±7 cm (n=369) at the age 9, as 141±7 cm (n=380) at the age 10, as 148±8 cm (n=409) at the age 11. In the study undertaken by Vandendriessche and his colleagues in Belgium, the average height of 181 male human subjects at the age 7 was noticed as 127,4 ±5,1 cm, of 245 male human subjects at the age 9 was noticed as 137,3 ± 6,0 cm and of 187 male human subjects at the age 11 was noticed as 148,5 ± 7,1 cm. For all age groups except 11, research results include lower degrees than literature. In some literatures it is indicated that between the age 7 and 10 the height and body weight increase both in male and in female children are at the same rate. Life standard and cultural situation of the society hereby may be influenced the physical improvement.

In the study carried out by Pienaar and Viljoen in South Africa on male children between the age 10 and 15 (n=604), the average of body weight at the age of 11,12,13,14 were respectively determined as 29,3 ±7,2 kg-31,2±6,2 kg-35,0 ± 9,2 kg- 39,1±9,3 kg and 44,5±10,9 kg. In the study carried out by Vandendriessche and his colleagues in Belgium on male children at the age of 7 and 11, the average body weight of seven years old boys was determined as 26,7 ± 4,9 kg, of 9 years old boys was determined as 31,9±5,6 kg and of 11 years old boys was determined 40,1 ± 8,4 kg. In the study carried out by Tuncer in Konya on primary school age nine years old male (n=90) and female (n=73) students, he noticed average body weight of female students as 26,8 ± 6,66 kg and of male students as 28,10 ± 6,00 kg. In the study carried out by Karatas and his colleagues in Malatya on 7-11 years old female (n=432) and male (n= 468) primary school students, the average body weight of female students at the age of 7,8,9,10,11 were respectively determined as 21,6±3,4 kg, 23,7±4,2 kg, 25,9±5,4 kg, 29,0±5,0 kg, 34,5±7,1 kg ; the average body weight of male students at the age of 7,8,9,10,11 were respectively determined as 22,7±3,5 kg, 24,9±4,4 kg, 27,7±4,9 kg, 31,4±5,6 kg ve 33,4±5,7 kg. According to literature, research results are higher. It can be said that for girls the increase in the body weight is higher than boys on account of the puberty differences between girls and boys.

Pinero and his colleagues' 1 mile jog& run average values between the 8 and 17 age groups were determined as 8,1 ± 1,4 min,sec among the boys who have 12,1 ±3 age average, as 9,3 ±1,5 min,sec among the girls who have 11,8 ± 3 age average. According to The National Physical Fitness Award's ½ mile jog& run standards, whereas 8 years old girls have 4,56 min,sec degree and nine years old girls have 4,50 min,sec degree, 8 years old boys have 4,22 min,sec degree and 9 years old boys have 4,14 min,sec degree. Research results have lower performance periods in comparison with literature. In the literature it is stated that until 12 years old, aerobic durability increases almost at the same level among both girls and boys but after puberty period it become slower among the girls in comparison with the boys.

In the study undertaken by Pıenaar and Viljoen on 10-15 years old males (n=604) living in South Africa, the average degrees of vertical jumping tests was determined as 23,3±5,8 cm for ten years old, as 23,2±7,7 cm for 11 years old, 23,8±5,2 cm for 12 years old, as 26,1±5,5 for 13 years old and as 29,4±8,5 cm for 14 years old. In the study carried out by Ayan and Mulazımoglu in Ankara on 8-10 years old female (n=1995) having 9±1 average ages, the average of vertical jumping degrees were found as 18, 03 ± 5, 28 cm . Research results among male children have higher average degrees in comparison with literature. In the study undertaken by Nalcakan and colleagues in Izmir on 12-14 years old female (n=21) volleyball players , the average of vertical jumping degrees of 12,3±0,6 age group girls were found as 44,7±5,0 cm and of 14,6 ±1,1 age group girls were found as 41,7±5,3 cm. Research results include lower vertical jumping degrees than literature.

In the study carried out by Nevil and his colleagues in Greece on 12 years old school age girls (n=324) and boys (n=348) , while the average degrees of sit& reach test of 12,2±0,5 female students were found as 18,0±6,8 cm, the average degrees of sit& reach test of 12,2±0,7 male students were found as 13,8±6,2 cm. According to literature, research results have higher degrees. In the study undertaken by Vandendriessche and his colleagues in Belgium on 7-11 years old male children, the average of sit& reach tests were obtained as 19,7±5,4 cm for seven years group (n=181), as 17,6±5,9 cm for 9 years group (n=245) and as 16,8±6,7 cm for 11 years groups (n=187). Research results are parallel with literature.

In the study undertaken by Tinazci and his colleagues in N.C.T.R on 7-11 years old girls (n=104) and boys (n=129) , the average degrees of body sit-up tests for 7,8,9,10,11 years girls were respectively determined as 11,81 ± 4,69 times, 16,52±3,87 times, 18,89±3,57 times, 18,05±3,87 times, 17,67± 6,95 times. The average degrees of body sit-up tests for 7,8,9,10,11 years old boys were respectively determined as 14,48 ±2,74 times, 16,32 ±4,01 times, 19,04±3,26 times , 18,50 ±2,78 times, 20,95 ±5,00 times. Research results show that according to literature, while both boys and girls have higher degrees at the age of 7, have lower sit-up degrees among the other age groups. In the study carried out by Volbekiene and Griciltte in Lithuania on 12-16 years old girls and boys, the average degrees of 30 seconds sit-up test were found as 23,8 ± 4,2 times for 12 years old girls (n=226), as 25,1±4,1 times for 14 years old girls (n=229), as 26,3±4,0 times for 12 years old (n=215), as 28,4±3,5 times for 14 years old (n=187). Research results

include lower average degrees according to literature. In the study undertaken by Vandendriessche and his colleagues in Belgium on 7-11 years old boys, the average degrees of 30 seconds sit-up were determined as 15,6±7,7 times for 7 age group (n=181), as 20,6±6,2 times for 9 age group, as 25,7±6,5 times for 11 age group (n=187). While research results are parallel with literature for 7 age group, have higher degrees for 9-11 age groups. As a result of studies in reference with muscular durability, it is stated that sex differences especially occur after 8 years old.

Conclusion. All the research results are considered, there is rapid increase in girls' performances than boys' performances. On the other hand it is understood that the durability, vertical jumping and sit-up degrees of boys are higher than girls. Depending upon physical development, it is observed that there is an increase in jumping both for girls and for boys; moreover there is also increase in muscular durability for boys.

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