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Short Communication

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The effects of 12-week training between 12-15 years old athlete on physical parameters

Abstract

Sports are the best way to improve individuals in terms of physic, emotion and society, to achieve cooperation and team spirit and to gain individual to the society. This study aims to determine the importance of sports on social skills and sport orientation, also to determine the effects of 12weeks training on some physical parameters of football players, who didn't have any obstacles in terms of health. A total of 81 subjects (12-15years old) participated in the study. In order to determine some physical, social skills and sport orientation characteristics of sports and non-sports children, flexibility test, push-up test, shuttle test, stop the long jump test, vertical jump test, flamingo balance test and augmentation test, 10,20,30m sprint and ball speed tests, 20m shuttle run test was used. Statistically significant differences were found in all tests except the gain orientation and target orientation, which are the sub-dimensions of body weight test and fitness orientation inventory ($p<0.05$). As a result, it was observed that the 12-week exercise applied to the children who are actively involved in sports had a positive increase in the physiological and physical parameters. It has been observed that sports provide positive improvements in social skills and sport orientation levels of children.

Keywords: training, physical parameters, social skills, children

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Introduction

Today, sports are the easiest way: to improve individuals in terms of physic, emotion and society, to achieve mutual harmony and cooperation, and to join them to the society. Adolescence, which is the most important development period of a human's life, affects a person's life a lot. According to WHO, 10-19 age range is adolescent period. Rapid physical growth and development in this period leads to anatomic, physiologic, mental, and psychological changes. Thus, sports play a major role in the physical activities of children at adolescent period.

Children's reaction to physical impositions is different from adults and changes in accordance with the growth and development of physical, functional, and gender characteristics. Physical fitness/aptitude in children should be studied separately from their growth and development period. Both growth and development and the intensity of physical activity affect fitness characteristics.

Research group

81 volunteer students and sportsmen joined the research. Experimental and control groups were informed about the research before the program and because they were not adults, consent forms were signed by their parents. Training continued regularly for 12weeks, 3days a week, 40-50mins by adding core exercise to the normal football training of the footballers. Pre and post exercising tests were conducted weekly and the difference in results was identified.

Measurements and tests done in the research

Tanita Compositon anaylsing tool was used to measure weight and body mass index values of the participants (Tanita).

To measure height seca76y, of which sensitivity degree is 0.01cm, was used. To measure body fat percentage skinfold caliper was used, Hand grip was taken separately from the right and left hand in kg, by using hand dinanomyter. To measure flexibility sit and reach test was used, to measure anaerobic strength, vertical jump test was used, to measure balance flamingo test was used. To measure strength sets up test were used, to measure sprints, 10m, 20m and 30m with and without ball sprints were applied by using HÜFA test. To measure aerobic resistance, 20m shuttle run test was used.

Analyzing data

To analyze data, SPSS V. 15 package program was used. And the possibility of deviation was taken as 0.01 and 0.05. Thus, analysis made was considered %69-95 reliable. Complimentary statistics for pre and post test were determined and T-test was used to compare them.

Results

In this study, physical and some metric characteristics of 12-15years old soccer players were compared with the control of the same age. Table 1 shows complimentary age, height and body weight, and the difference observed in pre and post tests.

Table 1 Variables that complete participating children who do and don't do sports

Variable		N	X± Sd
Age	Pre Test Post Test	81	13,07±0,95 13,54±0,99
Height	Pre Test Post Test	81	1,62±0,10 1,64±0,09
Body weight	Pre Test Post Test	81	56,08±12,65 57,67±12,65

Table 2 shows the comparison of the pre-test and post-test averages of the groups that do sports and those who do not. An increase was detected in those who did ($p<0.01$, $p<0.05$). There was no significant difference in body weight measurement ($p>0.05$). In the total of skin fold measurements, while a significant decrease was observed in both groups in Tanita fat measurements, a significant increase was observed in those who did not do sports in the Tanita fat/mass parameter, while a significant decrease was observed in those who did sports ($p<0.05$).

Table 2 T-test for comparing body weights and skin fold measurements of children who participated in the study and did not do sports

Variable	Group	n	X pre	X post	Sd. pre	Sd .post	t. pre	t.post	P.pre	P.post
Body weight (kg)	1 2	61 20	55,15 58,94	56,53 61,14	12,35 13,43	12,24 13,56	-1,17	-1,42	0,246	0,158
Triceps (mm)	1 2	61 20	13,52 21,05	12,81 21,20	6,51 8,57	5,87 7,39	-4,14	-5,19	0,000*	0,000*
Suprailiac (mm)	1 1	61 20	14,58 23,70	11,34 21,80	8,01 9,11	6,24 8,12	-4,27	-6,02	0,000*	0,000*
Abdomen (mm)	1 2	61 20	15,28 25,18	15,48 24,70	7,92 9,84	7,69 7,92	-4,56	-4,64	0,000*	0,000*
Supscapula (mm)	1 2	61 20	10,42 17,20	10,99 16,25	4,79 8,24	4,97 8,14	-4,53	-3,47	0,000*	0,001*
Sum (mm)	1 2	61 20	53,80 87,38	50,51 83,15	25,96 33,71	23,37 28,23	-4,65	-5,14	0,000*	0,000*
Body Fat %	1 2	61 20	14,72 25,98	13,56 25,20	7,35 12,72	7,06 12,15	-4,89	-5,27	0,000*	0,000*
Fat Mass	1 2	61 20	8,73 16,39	8,18 16,67	5,98 10,26	5,56 10,12	-4,10	-4,75	0,000*	0,000*

*(p<0,05) Group 1: Soccer players Group 2: Non-Sport

When **Table 3** is examined, a significant increase was observed in the average of the right hand grip strength test, left hand grip strength test in the experimental and control groups, while a significant increase was observed in the averages of the sit-and-reach test, the vertical jump test, the flamingo balance test and the standing long jump test, while a significant decrease was found in those who did not do sports ($p < 0.05$).

Table 3 Comparing the measurements of right and left hand grip strength test, sit and reach test, vertical jump test, standing long jump test and flamingo balance test of children who participate in the study and do not do sports t-test

Variable	Group	n	X pre	X post	Sd. pre	Sd .post	t. pre	t.post	P.pre	P.post
Hand grip right(kg)	1 2	61 20	31,22 22,30	32,15 23,90	8,42 7,18	7,62 6,76	4,26	4,32	0,000*	0,000*
Hand grip left (kg)	1 2	61 20	28,78 19,76	29,98 22,02	7,72 6,31	7,85 5,97	4,73	4,15	0,000*	0,000*
Sit&reach (cm)	1 2	61 20	25,82 23,50	27,04 23,10	6,59 9,97	6,83 8,36	1,19	2,12	0,236	0,038*
Vertical jupm(cm)	1 2	61 20	27,89 22,15	29,44 20,45	8,70 6,81	10,79 6,70	2,67	3,50	0,009*	0,001*
Standing B. Jump (cm)	1 2	61 20	1,57 1,33	1,69 1,31	0,32 0,23	0,28 0,35	3,13	4,93	0,002*	0,000*
Flamingo (n)	1 2	61 20	3,74 6,55	2,52 8,15	3,53 3,80	2,99 6,90	-3,04	-5,11	0,003*	0,000*

*(p<0,05) Group 1: Soccer players Group 2: Non-Sport

As a result of the 12-week training performed in Table 4, a significant increase was observed in the hüfa test, hüfa test dribbling, push-up test, shuttle test, 20 and 30 meter ball and ball-free speed tests, shuttle run test and vo2 maximum tests (p<0, 05). While there is a significant difference in the pre-test in the 10 meter speed test, there is no significant difference between those who do not do sports and those who do sports in the post-test.

Table 4 Comparison of hufa test, dribbling test, push-up test, shuttle test, 10m, 20m, 30m ball and ball-free speed tests, shuttle run test and Vo2 maximum measurements of children participating in the study and doing sports

Variable	Group	n	X pre	X post	Sd. pre	Sd .post	t. pre	t.post	P.pre	P.post
Hufa Test (s)	1 2	61 20	9,89 12,12	9,07 10,79	1,18 2,21	1,86 1,46	-5,80	-3,76	0,000*	0,000*
Hufa Test WB(s)	1 2	61 20	13,62 19,75	11,46 15,06	1,99 5,79	2,38 3,23	-7,14	-5,36	0,000*	0,000*
Push-up Test (s)	1 2	61 20	20,46 8,10	22,60 11,25	9,20 7,98	9,77 9,69	5,37	4,52	0,000*	0,000*
Push-up Test (n)	1 2	61 20	21,56 18,95	22,76 19,85	3,40 5,07	4,93 5,24	2,61	2,25	0,011*	0,027*

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Table Continued....

Variable	Group	n	X pre	X post	Sd. pre	Sd .post	t. pre	t.post	P.pre	P.post
10 m(s)	1 2	61 20	2,49 2,88	2,44 2,50	0,22 0,41	0,46 0,37	-5,59	-0,51	0,000*	0,612
10 m WB(s)	1 2	61 20	2,77 3,70	2,58 2,90	0,33 0,77	2,58 2,90	-7,57	-2,29	0,000*	0,025*
20 m(s)	1 2	61 20	4,09 4,71	3,92 4,64	0,41 0,75	0,60 0,73	-4,75	-4,41	0,000*	0,000*
20 m WB.(s)	1 2	61 20	4,70 6,01	4,52 5,54	0,58 1,03	0,83 0,87	-7,08	-4,72	0,000*	0,000*
30 m(s)	1 2	61 20	5,82 6,32	5,47 6,57	0,68 0,92	1,09 1,25	-2,57	-3,78	0,012*	0,000*
30 m WB.(s)	1 2	61 20	6,55 7,40	6,31 7,66	0,75 1,21	2,67 1,39	-3,77	-2,16	0,000*	0,034*
Shuttle run Test (n)	1 2	61 20	56,85 25,55	63,44 28,65	22,47 13,85	20,58 17,86	5,86	6,77	0,000*	0,000*
VO2 Max	1 2	61 20	37,47 26,27	39,86 27,73	8,88 4,88	39,86 27,73	5,36	6,90	0,000*	0,000*

*(p<0,05) Group 1: Soccer players Group 2: Non-Sport, WB: With ball

Discussion

In this study that we did, when skinfold values of children who do and do not do sports compared, triceps, abdomen, supscapula were statistically meaningful, while significant degrees was observed in the average of skinfold, level of triceps and suprailiac parts of the group who do sports, averages of abdomen and supscapula parts of those who don't do sports decreased, but increased was observed in those who do sports ($p<0.05$).

But when fat percentage and mass in the whole body examined, comprehensive decrease was observed in those who do sports. On the contrary, fat percentage who does not do sports stayed almost at the same level, although their fat mass increased ($p<0.05$). When all these are considered, it can be concluded that fat percentage of those who do sports decreased, but their fat levels stay the same because of the increase in the muscle level.

When vertical jump is considered, while pre and post test averages of the experimental group are 27,89±8,70 and 29,44±10,79, averages of the control group are respectively 22,15±6,81 and 20,45±6,70.

In a study that was done by ates and atesoglu[1] on 10-18 age range, comprehensive difference was observed in vertical jump values. It was concluded that vertical jump values of those who do sports are better.

According to the results of this study, significant when pre and post test results were examined difference was observed in the right hand grip of those who do sports.

Pre and post test averages of the sit and reach test of the experimental group is respectively 25,82±6,59 and 27,04±6,83, while the average the control group is 23,50±9,97 and 23,10±8,36. It was found out that the flexibility of the experimental group improved, especially following the 12week training program.

In the light of studies done, Vaeyens et al.[2] reported a significant difference in the flexibility values of 15years old footballers and sedanters.

Pre-post averages of flamingo balance test of the experimental group is respectively 3,74±3,53 and 2,52±2,99, while the averages of the control group is 6,55±3,80 and 8,15±6,90.

Çelebi,[3] in a study that he did in 12-14 age range, found the same results as we did. When sit-up test considered, average of experimental group; pre test is 20,46±9,20 repetion and post test is ; 22,60±9,77. Averages of the control group; pre test is 8,10±7,98, repetion and post test is 11,25±9,69. The results of the experimental group are better than the control group. Welk et al,[4] in a study that they did on 74 children found sit up test averages as 18.8.

Limitations of the study

Training continued regularly for 12weeks, 3days a week, 40-50mins by adding core exercise to the normal football training of the footballers. Pre and post exercising tests were conducted weekly and the difference in results was identified.

Conclusion

As a result, as a result of 12weeks of training, it was determined that children who do sports show more positive developments physically and mentally than children who do not do sports, and the statistical difference between them is in favor of those who do sports in a positive way.

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Conflicts of interest

Author declares there are no conflicts of interest.

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References

1. Ateş M, Demir M, Ateşoğlu U. The Effect of Plyometric Training on Some Physical and Physiological Parameters of 16-18 Age Group Male Footballers Niğde University. *Journal of Physical Education and Sport Sciences.* 2007.
2. Ateş M, Demir M, Ateşoğlu U. The Effect of Plyometric Training on Some Physical and Physiological Parameters of 16-18 Age Group Male Footballers Niğde University. *Journal of Physical Education and Sport Sciences.* 2007.

3. Çelebi F. Comparison of Postural and Biomotor characteristics of 12-14 Age Group Puberty Period Doing Sports and Sedentary Students. Master Thesis. Turkey: Muğla University, Institute of Social Sciences; 2000. p. 42–50.
4. Gregory J Welk, Roxane R Joens-Matre, Miguel A Calabro, et al. Rural–Urban Differences in Physical Activity, Physical Fitness, and Overweight Prevalence of Children. *J Rural Health*. 2008;24(1):49–54.

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