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The Investigation of Effect of the Basic Skills of Gymnastic Which is Applied to Preschool Autistic Students

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Abstract

The aim of this research is to investigate the physical development in 3-6 aged group of boys and girls students of fitness training which is applied to autistic students who take the special education in Erzurum. The research has been formed with 25 (12 girls and 13 boys) students. The groups have been created in two groups which were 3-4 aged and 5-6 aged. The tests of gross motor development which are walk, run, jump, splash, horizontal jump, gallop leap and the tests of object control skills which are hitting the ball with bat, bouncing ball, thrown ball catch, hitting the ball with foot, throwing ball, ball rolling and height, body weight have been performed to this students. After the measurements of students were made, the training has been done two months (8 weeks) with tailor-made movement education program. After that two months training the measurements were made again and the developments were compared. The statistic analysis of datas in research were obtained with using the SPSS 16.00 software package. In statistical methods, the minimum and maximum values, arithmetic average and standard deviation of students was evaluated. In the research results, the significant improvements have been reached in the tests of walk, run, bouncing ball, thrown ball catch and ball rolling of 3-4 aged group students. ($p>0.05$) It has been reached that the group of 5-6 aged students have significant improvements ($p>0.05$) in all of the tests.

Keywords: gymnastic, euro fit tests, physical fitness.

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1. Introduction

The basic features of autistic disorder are social interaction and significant impairment in communication, consisting of restricted interests and activities. The progress of the disorder shows big changes depending on the individual's chronological age and development level. Deterioration in reciprocal social interaction is very significant and continuous in autism. The deterioration which is in the use of non-verbal behavior and regulate the social interaction and communication is very apparent (for example; make eye contact, facial expression, taken body position, made arm and hand movements.) (Fazlioglu & Yurdakul, 2005.)

Autism can see an estimated one in 150 children. It occurs in boys 4 times more than girls. The symptoms in autism children are listed in three major areas. These are social interaction, communication and behavior (Robertson & Long, 2008).

The physical education and sport programs which are for people with pervasive development disorder include exercises to increase the cardio respiratory endurance at all levels of development. During infancy and toddler, it is required designed various activities to improve balance, stimulate sensory motor system, improve and promote the basic locomotor and non-locomotor skills which were prepare to active lifestyle (Ozer, 2010).

Autism children's features are different from each other. They are evaluated in toward lighter than the heaviest spectrum because of different development characteristic from each other. While some symptoms which is seen in autism observed intensely in one child, in other child it can not seen or rarely seen. Some autism symptoms may disappear in time or leave the place to the different behaviour (Fazlioglu & Yurdakul, 2005).

The other characteristic features of autistic children are repetitive activity labors, stereotypical uniform movements, to react the environmental changes and daily routines, showing unusual responses to sensory experiences (Eripek & friends, 1998).

Pre-school period is the period when children's imagination and creativity is at the highest level. In this period children play a lot. However, due to lack of imagination in children with autism, creative game and lack of social playing skills are observed extensively.

The two-five aged period is a very important period for the most prominent features of autism and diagnosis. Autism children have quiet normal physical development and they are beautiful, attractive. Children's normal physical appearance make it difficult to understand what is the problem of child by family and environmental. It is observed that autism children learn in time some movements of dance, swim and jumping rope which requires the use of large muscle skills because of depending on too little or not ability to imitate (Fazlioglu & Yurdakul, 2005).

Our study was planned that specifically autistic children in pre-school age benefit from exercises and movement education. Research has focussed on the development skills of children's big and small muscle groups, balance and coordination.

2. Material And Method

This research has been formed from 25 students (12 girls and 13 boys). Research groups were created in two groups which were 3-4 aged and 5-6 aged. The movement and exercise training program was prepared with targeting the development of small muscle groups needed to control objects with large muscle groups of children.

From the test of gross motor development which are walking, running, jumping, leap, vertical jump, gallop leap and from the test of object control skills which are hitting the ball with the stick, bouncing ball, catch the thrown ball, hitting the ball with feet, throwing the ball and ball rolling were applied to students and data were saved. At the end of the study same tests were performed again and the last test data were obtained.

After the measurement of students' two month (8 weeks) training program was conducted with tailor-made movement training program. The tailor-made movement training program is planned as a eight-week program and two study per week. Every study was made three days in week and 60

minutes per day. After the two month study datas were saved again and development were compared.

3. Findings

Table1: Gender, age, height and weight status of respondents participating to the survey

features		n	%
Gender	Boy	13	48
	Girl	12	52
Age	3-4 age	8	32
	5-6 age	17	68
Height	100-105 cm	5	20
	106-110 cm	4	16
	111-115 cm	8	32
	116-120 cm	4	16
	121 cm and above	4	16
Weight	20-25 kg	6	24
	26-30 kg	7	28
	31-35 kg	7	28
	36 kg and above	5	20

Table2: Tailor-made gymnastics movement training program

Weeks	Days	Goals and Activities	Gains	Materials
1. week	Saturday	Balance and coordination skills in walking, running, jumping, leap.	The ability of walking, running, jumping and leaping.	Gymnastic pad, funnel and gymnastic settle.
	Sunday			
	Wednesday			
2. week	Saturday	Educational games about balance and coordination skills in walking, running, jumping, leap.	The ability of working in a group and creating competitive.	Gymnastic pad, funnel, gymnastic settle and mini trampoline.
	Sunday			
	Wednesday			
	Saturday	Balance, coordination and improving self-confidence.	To stand in the balance in different body positions, to make successive different	Gymnastic pad, funnel, gymnastic settle and mini
	Sunday			

3. week	Wednesda y		movements.	trampoline
4. week	Saturday	Educational games about balance, coordination and improving self-confidence.	The ability of racing to stand in the balance in diffirent body positions, the ability of playing games with making succesive different movements.	Gymnastic pad, funnel, gymnastic settle and mini trampoline
	Sunday			
5. week	Wednesda y			
	Saturday	Balance, coordination and promptness	Doing exercises about balance, coordination and promptness.	Gymnastic pad, funnel, gymnastic settle, mini trampoline and pilates ball.
6. week	Sunday	Force and strenght	The ability of doing to improve the force and strenght.(to carry medicine ball, throwing ball, push-ups and sit-ups etc.)	Gymnastic pad, funnel and gymnastic settle. barfiks, min medicine ball
	Wednesda y			
7. week	Saturday	Force and strenght	The ability of doing to improve the force and strenght.(to carry medicine ball, throwing ball, push-ups and sit-ups etc.)	Gymnastic pad, funnel and gymnastic settle. barfiks, min medicine ball
	Sunday			
8. week	Wednesda y			
	Saturday	Individual and group demonstrations.		

Table3: The first and last tests results of respondents to the survey

Tests	First- Last Test	N	Min.	Max.	Z
Walking 25m	First test	25	6.07	8.15	,000
	Last test	25	5.45	7.05	
Running 25m	First test	25	5,25	8,60	,000
	Last test	25	5,00	6,45	
Jumping	First test	25	8	15	,000
	Last test	25	12	518	
Jump by stepping	First test	25	35	55	,000
	Last test	25	55	175	

	First test	25	20	35	,000
Standing long jump	Last test	25	35	55	
	First test	25	35	55	,000
Gallop leap	Last test	25	45	65	
	First test	25	5	7	,000
Hitting the ball with stick	Last test	25	7	10	
	First test	25	4	7	,000
The ball bounced	Last test	25	7	10	
	First test	25	4	8	,000
Catching the trown ball	Last test	25	8	10	
	First test	25	4	6	,000
Hitting the ball with feet	Last test	25	8	10	
	First test	25	4	12	,000
Throwing tennis ball	Last test	25	10	20	
	First test	25	2	5	,000
Ball rolling on line	Last test	25	4	9	

4. Conclusion and Evaluation

According to research results, it is achieved that students have significant development ($p < 0,001$) in tests of gross motor skills which are running, walking, leap, jumping, vertical jumping, gallop leap and in tests of object control skills which are hitting the ball with stick, bouncing ball, catch the thrown ball, hitting the ball with feet, throwing ball and ball rolling.

The prepared special movement training program, made a positive impact to students' large muscle groups and small muscle groups. As a result of this, a significant development on students' basic skills was determined.

Also in scientific studies related to special children in pre-school , people with learning difficulties have positive development in physical, social and mental with exercise program and sport activities.

Un and friends (9) were determined the significant development in knee flexion-extension of the muscle force as a result of physical fitness training which is done by them for mentally handicapped children in 11-18 aged.

Rimmy and Kelly (10) were observed the significant development in lower extremity muscle strenght with the weight training which is done by them. They were stated that fort his people this weight traning must include the activities of person likes, progressive, a custom-designed, targeting specific muscle groups which are legs, body, arm.

In their study Azeem, K. & Ameer A. A. (2011) were determined that if disabled students start young for their physical and motor performances, their success increase more. Also in development it is not determined a significant difference between girls and boys.

Ozbar and Kayapinar (2006) were achieved to significant development of students' hand-eye coordination in 6 month movement training program in their research about pre-school children.

As a result, if movement training program in pre-school children is planned well and gam and exercise program about the large and small muscle groups is seriously included, students' education and social life will be easy.

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