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INVESTIGATION OF THE CONTRIBUTION OF SLICKLINE EXERCISES WHICH İS APPLIED TO HEARING-IMPARED CHILDREN TO BALANCE SKILLS

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Abstract

The aim of this research is to search the contribution of slickline exercises which is applied to group of 5-15 aged students who study in hearing-impaired primary and secondary school to their balance skills.

The groups of 5-9 aged and 10-15 aged 38 students (12girl and 16 boys) participated to the research. 18 students of them (6girls and 13boys) were taken as experimental group and 18 students of them (6girls and 13boys) were taken as control group. Before starting to the studies first tests were applied to the students in experimental and control groups and saved. Studies have been being continued for 12 weeks with planning 90-120 minutes each day and 2 days in each week. At the end of the 12 weeks practice program, tests were applied again to children as a last test.

The obtained datas were analyzed with ESSP.20 program and calculated with variance analysis (ANOVA) for comparison between groups, frequency, arithmetic mean and tabled. At the end of the research, the group of 5-9 aged students' dynamic and static balance values (p>0,05) were found significantly. In group of 10-15 aged students' dynamic and static balance values (p>0,001) were found significantly.

As a result it is achieved that the balance developer slickline exercises for applying to hearing-impaired students in 5-15 aged group contributes positively to their dynamic and static balance development.

Keywords: *Hearing-Impaired, Slickline, Motor Skills, dynamic and static balance*

1. Introduction

While hearing is a process that develops naturally for most people, some people may experience problems in this process for various reasons and have difficulty hearing sounds in daily life at different levels (1).

Due to hearing deprivation, the hearing impaired individual misses the opportunity to speak and learn language at the most suitable age for learning and has problems in both understanding and speaking skills. Due to speech and language problems, the patient also has difficulties in cognitive, motor coordination, emotional-social, educational, professional and social areas (2).

There are four factors that affect the social and emotional development of a student with hearing impairment. First, family-child interaction plays an essential role in every child's development. Second, a student's peers and teachers play an important role in his or her social development. The third factor is awareness of being social. Finally, the student with hearing impairment may feel isolated and lonely because they cannot interact comfortably with others. They may perhaps feel like strangers in the world of people who feel in the eyes of society.

Hearing loss alone does not determine a person's social and emotional development. The behavior of people without hearing impairment can also be decisive in this regard. In fact, the negative attitudes of these people can lead to irreparable negativities in the behavior of people with hearing impairment (3).

If we look at the consequences of loss of balance and falling accidents in the world, a significant number of hip fracture cases (an average of 300 thousand in the USA every year) occur for this reason. When you include factors such as

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diseases, sedentary life, and medication use, it may be inevitable that you fall easily (4).

As we get older, with the decrease in the sense of balance, reflexes, muscle strength and height, and vision ability, those who enter their sixties cannot take their steps as easily as before, they begin to walk by spreading themselves and may have difficulty climbing stairs.

These movements, which you can easily apply in any environment, are especially useful in solving problems that arise when balance is disrupted due to the change in the body's center of gravity, where there are narrow support areas and where balance can be easily disrupted. Our aim in our research is to improve children's quality of life by improving their balance skills. As balance;

Purpose of the Study

Static balance: It is the ability of the human body to maintain its balance in a certain place or position.

Dynamic balance: The ability to maintain balance while moving.

Balancing with an object: It is the ability to maintain balance while performing a movement with a tool or using an additional tool (5).

In our research, a special movement training program was prepared for the education of children participating in the slickline exercise. Studies have been carried out within this program.

Material Method:

38 students (12 girls + 26 boys) in the 5-9 and 10-15 age groups participated in the research. Of these students, 18 students were taken as the experimental group (6 girls + 13 boys) and 18 students (6 girls + 13 boys) were taken as the control group. Before starting the studies, the first tests were applied and recorded to the students in the experimental group and control group. The studies were planned as 90-120 minutes, 2 days a week and continued for 12 weeks. At the end of the 12-week application program, it was re-administered to the children as a posttest.

Students from the sports sciences and recreation department voluntarily partnered in the studies. Slickline exercises were introduced and taught to volunteer students in the skill teaching course. In the studies, one volunteer was determined for each hearing-impaired student.

Table 1: Age and class status of the students participating in the study

AGE	STATES		N		%	
	EXPERIMENT	**CONTROL**	**EXPERIMENT**	**CONTROL**	**EXPERIMENT**	**CONTROL**
	10	**11**	**2**	**2**	**11,3**	**11,3**
	11	**12**	**3**	**3**	**16,6**	**16,6**
	12	**13**	**5**	**5**	**27,7**	**27,7**
	13	**14**	**4**	**4**	**22,2**	**22,2**
	14	**15**	**4**	**4**	**22,2**	**22,2**
CLASS	**2**	**2**	**1**	**1**	**5,3**	**5,3**
	3	**3**	**4**	**4**	**22,2**	**22,2**
	4	**4**	**5**	**5**	**27,7**	**27,7**
	5	**5**	**4**	**4**	**22,2**	**22,2**
	6	**6**	**2**	**2**	**11,3**	**11,3**
	7	**7**	**2**	**2**	**11,3**	**11,3**

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Table 2: Experimental Group Minimum, Maximum Pre-Test and Post-Test Conditions

Tests	N	Minimum	Maximum	Mean	Std. Deviation	Z
Flamingo front	18	3,68	35,00	18,0385	16,35789	0,001*
Flamingo son	18	5,65	60,00	20,6540	15,67349	
Dynamic balance front	18	10,12	21,10	15,2690	2,83308	0,001*
Dynamic equilibrium end	18	14,20	24,65	14,8445	2,84084	
Static equilibrium front	18	2,10	11,10	7,8300	2,85880	0,001*
Static equilibrium end	18	5,30	13,30	9,4150	2,77513	

Table 3: Control Group Minimum, Maximum, Pretest and Posttest Cases

Tests	N	Minimum	Maximum	Mean	Std. Deviation	Z
Flamingo front	18	3,68	25,37	9,5800	5,04296	3,025
Flamingo son	18	3,55	25,65	10,1040	4,98740	
Dynamic balance front	18	10,12	21,10	14,5955	2,50143	,448
Dynamic equilibrium end	18	10,32	22,00	14,5505	2,62346	
Static equilibrium front	18	3,00	11,10	7,1450	3,19679	,403
Static equilibrium end	18	2,80	12,00	7,1200	3,17401	

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Results and Discussion

As a result of the research, a significant improvement was observed in the flamingo balance, dynamic balance, static balance results of the students in the experimental group at the level of p = 0.05 and p = 0.001.

Regarding the research, Ciğerci et al. (2011) "Evaluation of some physiological and motoric characteristics of hearing-impaired and non-hearing-impaired students in the 9-15 age group" data in their research included the reaction time of the hearing impaired, claw strength, standing long jump, balance, anaerobic power and It shows that it negatively affects some motor skills such as agility. However, when the body fat percentage, claw strength, flexibility, anaerobic power and speed values of hearing impaired and non-hearing impaired people who do sports are examined, it is seen that the hearing impaired are better or closer. This shows that hearing impairment does not prevent doing sports (6).

In his research, Savucu found that in many studies on the motor performance of hearing-impaired children, children with vestibular damage were not considered as a separate group with other children with hearing loss. For this reason, studies have found positive developments in some sporting activities (running, hitting, bouncing) among hearing-impaired children, while delays were found in some activities (bouncing the ball on a fixed place, catching, kicking the ball with the foot) (7).

Reich et al. In their studies, physical education activities for the hearing impaired provide educators with the opportunity to adapt physical education activities differently, improve the communication skills of children and educators, etc. They emphasize that it is important in terms of contributing to children's development of sign language (8).

As a result of Şirinkan's (2011) study titled "Investigating the effects of sportive educational games on the physical development of 10-15-year-old hearing-impaired students", the students in the experimental group were able to perform flamingo balance, touching the discs, flexibility, 30-second push-ups, 30-second sit-ups, arm holding in chin-ups, arm pulling in chin-ups. A significant ($p<0.05$ and $p<0.001$) improvement was observed in right-claw strength, 40 m ramp walking, 40 m ramp wheelchair carrying, and vertical jump tests (9).

In addition, in Gökdoğan's (1988) study titled "The Level of Satisfaction with Body Image in Adolescents Attending Secondary Education", it was concluded that participating in sports activities positively affects the psychological and social development of the adolescent (10).

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