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The effect of six weeks exercise of Tanavarz (rope dancing) national plan on sensational-motional abilities (static balance, dynamic balance and agility)

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ABSTRACT

The purpose of this study is investigating the effect of six weeks exercise (12 sessions) of Tanavarz (rope dancing) national plan on sensational – motional abilities of static- dynamic balance of fourth class's students of Piranshahr's primary schools. Method of research is experimental – field that students of two different classes from two schools, one group as experimental (61 persons) and another as control group (64 persons) were selected randomly. For measuring strek test, for dynamic balance walking on balance wood and for agility measuring 9×4 running have been used. At first, pretest variables of both groups were measured. Then, experimental group practiced 12 sessions of approval education ministry's exercises individually and gregariously that each session was 45 minutes. Comparison between results of pretest and protest of both groups, i.e. experimental and control, showed that attendance in Tanavarz plan caused that trained group improved their agility and balance abilities in comparison to control group. This difference of confidence limit $p \geq 0.05$ and $p \geq 0.01$ is meaningful. In addition, individual comparison of static and dynamic balance and also agility of experimental and control groups showed that these variables in experimental group at $p \geq 0.05$ level had meaningful influence. Moreover, there was a meaningful relation between protest scores of agility and static balance and also agility and dynamic balance of experimental group. Tanavarz national plan leading to improvement of sensational – motional growth, therefore this plan could be used in schools for this purpose.

Key words: Tanavarz national plan, sensational-motional abilities, balance, agility

INTRODUCTION

Nowadays human health is being endangered by automation and industrialization and physical activities are being decreased considerably. Because the role of society base (children and juveniles) in this time cycle is critical and physical activity is necessary for health and safety of them to achieve future goals, mental and physical health is cornerstone of in their scope education. In Iran, education ministry is responsible for this critical task and in recent years by recruiting athletic specialists and sport sciences in primary schools has been performed a revolutionary role with long term overlook, hence conducted some plans that Tanavarz is one of approved plans of health and physical education adjunct of education ministry [1]. It should be mentioned that rope dancing committee under supervision of public sports federation is operating in sport and juvenile ministry in various age levels. Rope dancing is a perfect and pleasurable physical activity that could be played individually or collectively by short or long, one or two folded ropes. This activity was prevalent among different ages as a game and recreation many years ago, in addition

athletes of others fields do it for increasing consistency of muscles and nerve and finally improving their physical preparation. Some special characteristic of rope dancing is as following:

1. It has many skills and is applicable and interesting for all ages.
2. It has most educational profit.
3. It is best sport for duration of children's growth and juvenile.
4. It is pleasurable and interesting for children and juveniles.
5. It is a little risk sport with least possible physical damage.
6. It could be played individually or collectively.
7. With rhythmic music is most influence [2].

The relation between motional activity and comprehension has been studied by many growth scientists. They suggested some theories about motional – sensational activity. As an example, currently a theory which is called “systems theory” is the base of researches for investigating balance and motion. According to this theory, ability to hold and control body in the space is a product of complicated interference that takes place between muscular, skeletal and neurotic systems. Significance of each system is various according to the goal of that motion and environment condition [3]. Theories such as neurotic organization by Delakuta (1996), sensational integration by Abrous (1972) and sensational – motional theory by Kefart (1971); all of them believe that both cognition and comprehension phenomena have a common goal and for improving mental performances of student, motional ability of student should be developed [4]. Pine and Isax (2002) argue that any motion that is done by an individual, he/she involved in a sensational – motional process.

Literature Review

In the context of physical and gaming activities significance, few studies have been done. However, some of these studies are as following.

Yousefi (2003) in an investigation found that school games have a positive effect on sensational – motional skills of third class of primary students especially on balance, rapidity, consistency and precision [7]. Kurdi (2000) found that current games of south part of Tehran for 9 – 10 years old children provide an appropriate context for acquiring sensational – motional abilities especially rapidity, agility and balance [8]. Study conducted by Salman (1992) showed that physical activities have critical role in accelerating mental development of 3-9 years old children [9]. In addition other selected physical activities had shown that these activities have a positive effect on sensational – motional abilities in the context of rapidity development of kindergarten and primary school children [10, 11]. In addition, balance defined as a process of body retention around base level (Gambetta, Gray) [12], is most important athletic ability that involve in different sport activities [13]. Generally, balance is divided into two categories: static and dynamic [14]. It should be mentioned that vigor and muscle power are the most important prerequisites that are necessary for optimal doing routine tasks, job operations and especially athletic activities [15, 16 and 17]. Acquiring more power decreases risk of probable damages. Yesis argue that most athletes need power and speed, although Waton believe that the role of power and rapidity is depend on the kind of sport and gaming position [18]. Evidences show that regular involvement in resistance exercising with plyometric plan increases power and vigor of athletes [19, 20].

The purpose of this study was investigating the effect of six weeks exercise (12 sessions) of Tanavarz (rope dancing) national plan on sensational – motional abilities of static- dynamic balance of fourth class's students of Piranshahr's primary schools. According to mentioned description, following question will be arising from this study:

Does Tanavarz national plan improve sensational – motional abilities of male students?

Can physical education teachers improve sensational – motional abilities by Tanavarz national plan?

For finding the answers of abovementioned questions, following hypotheses were investigated:

- 1 – Tanavarz has a positive effect on agility of fourth class's students of primary schools.
- 2 - Tanavarz has a positive effect on static balance of fourth class's students of primary schools.
- 3 - Tanavarz has a positive effect on dynamic balance of fourth class's students of primary schools.
- 4 – There is a meaningful relationship between components of sensational – motional abilities (agility, static and dynamic balance).

MATERIALS AND METHODS

In addition, SPSS software version16 with confidence limit of $p \leq 0.01$ and $p \leq 0.05$ for all of hypotheses has been used for analyzing acquired data. Method of this study is experimental – field research. Statistical society is all male student of primary schools of Piranshahr (n=10) of 2012-2013 educational year. At first stage two schools was clustered selected that students of one school were experiment group (n = 61) and other school were control group (n =64). For investigating the effect of six weeks exercise of Tanavarz on agility and balance abilities has been used.

Measuring device

1 – china-made stopwatch joerex model

2 – Two wooden bars

3 – Balance wood with the length of 4 meters for performing dynamic balance, gymnastic pillows for placing two ends of balance wood for safety.

RESULTS AND DISCUSSION

Table 1 shows individual characteristics of both experimental and control groups, results show that both groups approximately have same age and height.

Table 1: age, weight and height indexes of experiment and control groups

Groups	N	Age (years)		Weight (kg)		Height (cm)	
		Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Test	61	10.56	0.50	30.03	3.77	138.46	7.68
Control	64	10.41	0.49	30.70	1.57	137.66	4.28

As could be observed from table 2, pretest average statistical indexes for static balance in experiment and control groups are the same as each other approximately, but posttest average of static balance index of experimental group has been improved considerably with respect to control group.

Table 2: Statistical indexes of static balance for both groups

groups		N	Mean	Std. Deviation	Std. Error Mean
Agility (Pre-test)	test	61	11.2608	.44137	.05651
	control	64	11.8659	.62601	.07825
Agility (post-test)	test	61	11.7693	.57022	.07301
	control	64	11.9313	.66637	.08330
Static balance (Pre-test)	test	61	24.13	4.642	.594
	control	64	23.92	4.477	.560
Static balance (post-test)	test	61	26.77	4.642	.594
	control	64	24.58	4.253	.532
dynamic balance (Pre-test)	test	61	11.92	1.960	.251
	control	64	11.58	1.966	.246
dynamic balance (post-test)	test	61	10.15	1.778	.228
	control	64	11.00	1.834	.229

Table 3 shows results of t test, that is, comparison pretest and posttest averages of both groups. In this study, first, second and third hypotheses T test with non-equal averages was used. Differences between averages of T test at beginning of test in $p < 0.05$ confidence limit was not meaningful. Table 3 show the effect of Tanavarz national plan on static balance by comparison experiment and control groups that was meaningful in $p < 0.05$ confidence limit and even with $p < 0.01$ confidence limit, in other words, experiment agent i.e. Tanavarz national plan could leads to improving agility, static and dynamic balance in experiment group.

In this study, independent T test has been used for results of statistical data for investigating first; second and third hypotheses. All of Pierson correlation coefficient has been used for fourth hypothesis and results of correlation coefficient of protest for three variables: agility, static balance and dynamic balance have been shown in table 4. Obtained results show a meaningful relation of these three variables in 0.05 and even 0.01 limits.

Table 3: Leven test for averages of experimental and control groups

Independent Samples Test							
groups		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Agility (Pre-test)	Equal variances assumed	7.948	.006	-6.218	123	.000	-.60512
	Equal variances not assumed			-6.269	113.449	.000	-.60512
Agility (post-test)	Equal variances assumed	4.131	.044	-1.456	123	.148	-.16191
	Equal variances not assumed			-1.462	121.616	.146	-.16191
Static balance (Pre-test)	Equal variances assumed	.008	.928	.257	123	.798	.209
	Equal variances not assumed			.256	122.126	.798	.209
Static balance (post-test)	Equal variances assumed	.110	.740	2.755	123	.007	2.192
	Equal variances not assumed			2.749	120.785	.007	2.192
dynamic balance (Pre-test)	Equal variances assumed	.082	.774	.967	123	.335	.340
	Equal variances not assumed			.968	122.748	.335	.340
dynamic balance(post-test)	Equal variances assumed	.411	.522	-2.636	123	.009	-.852
	Equal variances not assumed			-2.638	122.964	.009	-.852

Table 4: Correlations				
		agility	Static balance	dynamic balance
agility	Pierson correlation	1	-.472**	-.348**
	Sig.		.000	.006
	n	61	61	61
Static balance	Pierson correlation	-.472**	1	.516**
	Sig.	.000		.000
	n	61	61	61
dynamic balance	Pierson correlation	-.348**	.516**	1
	Sig.	.006	.000	
	n	61	61	61
**. Correlation is significant at the 0.01 level (2-tailed).				

CONCLUSION

The aim of present study is investigating the effect of six weeks exercise of Tanavarz national plan on sensational – motional abilities. Comparison between posttest experimental and control groups shows that experimental group experienced a considerable progress in agility, static and dynamic balance abilities and national rope dancing plan (Tanavarz) had a positive and meaningful effect on sensational – motional abilities of fourth class's students of primary schools, in another words, agility measure improved with balance increase and vice versa.

Obtained results of this study about the effect of rope dancing (Tanavarz) on sensational – motional abilities (agility and static – dynamic balance) is in consistency with Erikson et al (2003), Von Burdon (2002), Kiomerth Zeglu et al (1998), Lam (2001), Noorbakhsh and Rezvaniasl (2005) and Usefi (2003). Conclusions of Srouch (2002), Noorbakhsh and Rezvaniasl (2005) and Kurdi (2000) are consistent with conclusion of this study about relation between agility and static and dynamic balance in experimental group. Smith (2000) believes that any motional skill could be considered a sensational – motional skill and sensational and motional actions are non-separable. In addition, enrichment of motional experiences usually increase individuals ability in more effective creating or understanding events that individuals encountering them, and in game playing as a pleasurable activity develop sensational – motional abilities of children. [13]

According to researchers' opinions and conclusion of present study, one could say that rope dancing (Tanavarz) has positive effect on sensational – motional abilities and should be exercised regularly and properly and adequately in order to leads to improvement and development of agility and balance abilities of students. Therefore,

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