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EFFECT OF MOTOR SKILL TRAINING PROGRAMME ON MOTOR PROFICIENCY IN 8 -10 YEAR OLD CHILDREN

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Abstract

The purpose of the study was to determine the effect of motor skill training programme on motor proficiency in the 8- 10 year old children. To achieve this, 70 children were randomly selected (N=70) from the summer camp conducted in LNCPE, Trivandrum. All the subjects were randomly divided in to two groups with 35 each as experimental and control group. Experimental group underwent motor skill training programme for a period of 8 weeks. The variables selected for the study were speed and agility, balance, upper limb coordination, strength and bilateral coordination. The test item selected for this study was short form of Bruininks Oseretsky test for motor proficiency (BOTMP). The dependant't' test was applied to determine the difference between the means of two groups. To find out whether there was any significant difference between the experimental and control groups on adjusted post test means the analysis of covariance was used. To test the level of significance of difference between the means 0.05 level of significance was fixed. It was concluded that, there was a significant improvement takes place on all the dependant variables and also there was a significant difference exists between experimental and control group.

Keywords: Physical Activity, Motor Proficiency, Motor Skill Training, Bilateral coordination, Upper Limb Coordination

Introduction

Preschool age is thought to be very important for human motor development, as in that specific period the fundamental movement skills are developed and. The mastery of those skills is a prerequisite for both daily life functioning and participation in later physical or sport-specific activities (Fischer et al., 2005). During preschool years, changes due to growth and maturation occur quite rapidly and affect children's motor behaviour (Gallahue and Ozmun, 1998). Motor proficiency is essential in early childhood for overall motor development and considered as the basis and building blocks of more complex movements skills. The child who arte mastered in movement skills, he can move to the combination of fundamental movement skills like running and jumping, throwing and catching, etc....failure to develop and refine fundamental motor skills and combination of motor skills during the growing age often leads to frustration and failure during adolescence and adulthood. The children who are not well with the basic movements in his childhood, then he cannot perform the motor skills as

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good as their counterparts. This will lead to make him feel that frustrated and bad about himself. So he did not participate in any games. This will make them negative minded and introverts. In this century of high technology, we often find that the motor development of our young children has not kept pace with their cognitive development & chronological age. The reason for this lag is because of today's lifestyle. Many children are driven to school instead of walking or riding bicycle. Most parents consider this trend as their status in society. This will leads to bad health in their children; unfortunately the parent didn't realize this. The children couldn't get chance to engage in many interactive and active neighborhood games and also they can't enjoy the spirit of society. Now the children are like to watch to TV and also they spent their free time with the computer or video games instead of outdoor games. All of this has lead to decline in the motor skills development of children. Motor development is influenced by many factors such as practice and appropriate instruction, provided by teachers, even in preschool and elementary school. The order and duration of all the developmental phases is crucial to every individual's future performance (Jose Angelo, 2013). Breytenbach (2013) conducted a study on motor skill development programme for 10 to 12 year old children. In that study, he designs a motor skill development programme to improve the balance and bilateral coordination. The results of the particular study reveals that, the intervention programme had a positive effect on overall motor proficiency and balance and significantly improved bilateral coordination. With this concept, the researcher makes an attempt to find out the effect of motor skill training programme on 8 -10 year old children.

Methodology

The study was aimed to find out the effect of motor skill training programme on motor proficiency in 8 to 10 year old children. To achieve this, 70 children were randomly selected (N=70) from the summer camp conducted in LNCPE, Trivandrum. All the subjects were randomly divided in to two groups with 35 each as experimental and control group. Experimental group underwent motor skill training programme for a period of 8 weeks. The training was given thrice in a week for duration of 90 minutes per session. The control group did not participate in any special training other than the regular routine. The variables selected for the study were speed and agility, balance, upper limb coordination, strength and bilateral coordination. The test item selected for this study was short form of Bruininks Oseretsky test for motor proficiency (BOTMP) a test that provide an overall view of a child's motor development. The experimental design used for the study was be repeated measure design. The pre-test were administered before the application of the experimental treatment followed by the post-test on the subjects. The dependant't' test was applied to determine the difference between the means of two groups. To find out whether there was any significant difference between the experimental and control groups on adjusted post test means the analysis of covariance was used. To test the level of significance of difference between the means 0.05 level of significance was fixed.

Criterion Measure

The test item chosen as criterion measures were found most reliable and were used

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widely in assessing Motor Proficiency of children. Running speed and agility was measured and recorded to the nearest 1/10th of a second. Static balance was assessed using standing on a preferred leg on a balance beam and recorded to the nearest seconds. Bilateral coordination was assessed using jumping up and clapping was recorded to nearest whole number.

Upper limb coordination was assessed by catching a tossed ball with both hands and was recorded to the nearest whole number. Explosive strength was measured by standing broad jump and recorded to the nearest inches.

Results and Discussion

TABLE 1
EFFECT OF MOTOR SKILL TRAINING PROGRAMME ON MOTOR PROFICIENCY OF CHILDREN

Variables	Groups	Pre test		Post test		t value
		Mean	SD	Mean	SD	
Speed	Exp	8.591	.615	8.29	.59	5.25*
	Control	9.773	.721	9.72	.89	0.642
Balance	Exp	4.657	1.327	5.8	.59	5.16*
	Control	4.378	1.497	3.84	1.76	3.78*
Bilateral coordination	Exp	2.771	1.238	4.71	.71	10.36*
	Control	2.378	1.421	2.68	1.42	1.51
Strength	Exp	1.057	.167	1.19	.14	8.38*
	Control	.944	.184	.94	.15	.024
Upper Limb Coordination	Exp	2.057	.725	2.89	.32	6.99*
	Control	1.486	.989	1.68	1.01	1.56

Significant at 0.05 level of significance i.e., 2.305.

Table 1 indicates that, there was a significant difference in the experimental group after the training period in all the selected motor proficiency variables, speed, balance, bilateral coordination, strength and upper limb coordination.

The t test results shows significant difference in the pre and post test score of selected motor proficiency variables in experimental group. To know the effect of independent variable on motor proficiency variables we have to consider the pre test scores as covariate. For this ANCOVA was used. The results of the analysis of co variance for the experimental and control group after the motor skill training programme on motor proficiency variables were presented in tables 2.

TABLE 2
ANALYSIS OF COVARIANCE FOR POST TEST SCORES OF SELECTED MOTOR PROFICIENCY VARIABLES FOR THE EXPERIMENTAL AND CONTROL GROUP

Variable	Group	SV	SS	df	MS	F
Balance	E	BG	52.90	1	52.90	53.83*
	C	WG	65.84	67	.983	
Speed	E	BG	8.50	1	8.50	10.63*
	C	WG	53.60	67	0.800	
Upper limb coordination	E	BG	12.59	1	12.59	34.52*
	C	WG	24.45	67	0.36	
Bilateral coordination	E	BG	57.70	1	57.70	64.51*
	C	WG	59.92	67	0.89	
Strength	E	BG	34.33	1	34.33	77.99*
	C	WG	29.49	67	0.44	

*Significant at 0.05 level

The findings of the study indicated that 8 weeks of physical activity programme resulted in significant improvement in most of the variables of motor proficiency in experimental group where as no improvement occurs in the control group in the selected variables. The findings are agreeable with the previous studies (Fahini et al. 2013; Fotini et al. 2009)

The results of the study showed improvement in running speed and agility of the experimental group. The movement of a body at a constant rate requires sufficient driving force to balance that resist movement. The resisting force has several components that are positive and negative. It might be that speed was improved by either increasing the positive force i.e., through improved strength or decreased negative forces might have

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reduced through improved neuromuscular coordination and flexibility.

Experimental group improved significantly in balance following 8 weeks physical activity programme. This improvement might be due to the emphasis on posture which brings about proper alignment of body parts, kinesthetic sense and concentration. At the same time performance of the activity such as walking between two straight lines and various movements in different directions are performed repeatedly might be developed the ability to maintain balance in different positions.

Findings in relation to upper limb coordination and upper limb dexterity showed significant improvement in performance of experimental group. These were characterized by integrating visual information with limb movement. The improvement might be due to the improvement of neuromuscular coordination, proper stimulation of the impulse from sensory nerve to motor nerve. Activities such as throwing and catching the ball, ball passing, rolling the ball, throwing at targets might have resulted in the improvement.

Experimental group improved significantly in bilateral coordination followed by 8 weeks of physical activity training. It might be that bilateral coordination was improved by the activities such as ladder drills, jumping jacks and the movements like changing direction immediately according to the instruction.

Strength of the experimental group showed significant improvement. It might be due to nervous recruitment, proper muscles involvement through right movement pattern and concentric contraction of muscles. At the same time body resistance training and stepping exercises helped in the improvement of strength.

Conclusion

Within the limitations of the present study and on the basis of findings, the following conclusions were drawn:-

There was a significant improvement takes place on selected motor proficiency variables in experimental group due to the effect of 8 week general physical activity programme.

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