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Effect of healthy activity programmes on kinesthetic perception and self-concept among school students

[1] Anup De, [2] Soumendranath Ghosh

[1] Junior Research Fellow, Exercise and Sport Physiology Laboratory, Department of Physical Education, Visva-Bharati, Santiniketan, West Bengal, India

[2] Assistant Professor, Govt. College of Physical Education for Women, Dinhata, West.Bengal, India

Abstract

Purpose of the study was to investigate the effect of healthy activity programmes on kinesthetics perception and self-concept among school students.

Subjects were selected from Banipur Jawahar Navodaya Vidyalaya, Northn 24 Paraganas, West Bengal. Total 80 (eighty) sample sizes were randomly selected in two age groups i.e. 12 year and 14 year. The age of the subjects were ranged between 11-14 years.

Variables were considered under kinesthetic perception and self-concept for identifying the effect of healthy activity programme.

Criteria of kinesthetics perception and self-concept were measured as "Distance perception jump" test and Dr. Raj Kumar Saraswat standardized self-concept questionnaire respectively.

Experimental protocol was made by pretest and post-test structure of two experimental groups and two control groups. Six week healthy activity programme was given only to experimental group.

Statistics were done on mean, Standard deviation, standard error of mean, and ANCOVA for investigating the effect of healthy activity programme on school students in which level of significance was set at 0.05 level of confidence.

Result of the present study shows that there is no significant effect of healthy activity programmes on 12 yrs school students in respect of kinesthetic perception. Significant effect has been found on healthy activity programmes of under 14 yrs school students in respect of kinesthetic perception. It is also found that healthy activity programmes have significant effect on self-concept among under 12 yrs and under 14 yrs school students.

Findings associated that kinesthetic perception and student self-concept increase according to chronological growth of age. Because the age gradually acquires higher physical fitness and their neuro-physiological demands are more.

Implementation is leads that if healthy activity programme can continuously be maintained then kinesthetic perception and self-concept may be developed and healthful citizens may be created.

Conclusions are made that healthy activity programmes have a significant effect for maintaining and improving kinesthetic perception and self-concept of 12 year, 14 year school students.

Keywords: kinesthetic perception, self-concept, healthy programme, school children

1. Introduction

Physical inactivity and low fitness in children and adolescents are raising health burdens worldwide. The fact that these factors also track into adulthood emphasizes the necessity to evaluate and find effective strategies for increasing physical activity and fitness in youth. This statement is an update to a previous policy statement on athletics for preadolescents and incorporates guidelines for sports participation for preschool children. Participation in such sports and games allowed for development of motor skills, social interaction, creativity, and enjoyment for participants. The starting age for organized sports programmes has also evolved to the point that infant and preschool training programmes are now available for many sports. In infancy and childhood, interaction with the environment and the experiences arising there from enable the individual to programme his mental software in order to do able to solve complicated problem, make decisions, think rationally, judge correctly, form concepts, assimilate ideas, innovate and create things.

Kinesthetic is often referred to as the muscle sense or the motor sense. The kinesthetics sense has popularly been called the sixth sense because it is the first recognized addition to the original five senses. Kinesthetic abilities are primarily dependent on the motor control and regulation process of the central nervous system. Kinesthetics sense have also important and strong links with the motor skills as the motor coordination focused the basis of both. For effective coordination of a motor act to take place there must be constant sensory stimuli set up by the act itself which "feedback" the result of movement and produce correction in the nervous system.

Some research study also shows that the healthy physical activity programmes contribute to the development of a favorable self-concept. Therefore, activity programmes can and should make beneficial contributes to the self-concepts of the participants. Footballers or Cricketers having a correct Self-Concept must acquire the skill very easily. Without correct self-concept it is very difficult for anyone to acquire any kind of skill. Self-Concept plays a significant role in the growth and development of a person.

2. Method and Materials

Selection of the subjects: Total 80 (eighty) school students were selected from Jawahar Navodaya Vidyalaya, Banipur, North 24 Paraganas, West Bengal for the purpose of the present study. Those 80 (eighty) school students were divided into two age groups i.e. under 12 year age group (N_{40}) and under 14 year age group (N_{40}). Further these two groups were subdivided

between two equal groups, one is experimental group (N=20) and other is control group (N=20). The age of the subjects were ranged between 11-14 years. Random group design was adopted for this study.

Selection of the variables

To investigate the effect of healthy activity programmes on school students, the following variables were undertaken for the present study i.e. kinesthetic perception**,** self-concept and it was measured by "Distance perception jump" test and standardized self-concept questionnaire.

Kinesthetics perception was assessed by "Distance perception jump" test. It measures the ability to perceive distance by concentrating on the effort involved in a jump. The jumping distance to the nearest 1/4 inch from the target line to the farthest heel was measured and recorded in inches.

Self-concept was assessed by standardized self-concept questionnaire and developed by Dr. Raj Kumar Saraswat (1971) [22]. It consisted of 48 items and six dimensions which were physical, social, intellectual, moral, educational and temperamental. Each dimensions had eight items. Each item was provided with five alternatives by the author. High score in the inventory indicated a higher self-concept, while low score showed low self-concept. Reliability of the inventory was 0.91for the total self-concept measure. The reliability co-efficient of various dimensions varied from 0.67 to 0.88.

Experimental protocol

Two equal groups were taken from 80 school students i.e. under 12 year and under 14 year age group. Every group had one control group and one experimental group. Pre-test and post-test data were taken from every group. Six week healthy activity programme was given only to experimental group.

Experimental training items

Healthy activity programme is a series of various programmes through which any individual can enjoy his health and maintain a disease free life and it includes jogging and running**,** general and specific exercises**,** swiss ball exercises**,** aerobic dance exercises**,** yogic exercises**,** meditative exercises**,** recreational activity**,** various motor drills.

Statistical Procedures

Mean, Standard Deviation, Standard error of mean and further one way analysis of co-variance (ANCOVA) was done on the two variables among pretest - post data. Later the LSD (equivalent to no adjustment) post-hoc test was done on those dimensions in which "F" ratios were found to be significant, in order to verify whether the difference really exist or not for which the level of significance was set at 0.05 level of confidence.

3. Result and Discussion

The result of the study has been presented in tabular and numerical form as given here under.

Table 1: Analysis of co-variance (ANCOVA) of means of kinesthetic perception between experimental and control group of under 12 yrs school students

	Experimental Group		Control Group	Source of Variance	S S	df	MSS	F ratio
Pre-test	Mean	1.8375	1.9850	A	0.218	1	0.218	0.050
	SD	2.2394	1.9301	W	166.065	38	4.370	
	SEM	0.5007	0.4315					
Post-test	Mean	1.4625	2.0700	A	3.691	1	3.691	1.042
	SD	2.1494	1.5686	W	134.536	38	3.540	
	SEM	0.4806	0.3507					
Adjusted Post-test	Mean	2.0700	1.4625	A	2.391	1	2.391	3.177
				W	27.843	37	0.753	

*Significant at 0.05 level of confidence. $F_{0.05}$ (1, 38) = 4.10, $F_{0.05}$ (1, 37) = 4.10

From the above Table-1, it is clearly evident that there are insignificant paired mean differences exist among pretest, post-test and adjusted post-test of control and experimental group in respect of under 12 yrs school students. The computed 'F' value of 0.050, 1.042, 3.177 are found to be lesser than that of required tabulated (4.10) value to be significant at 0.05 level of confidence.

Table 2: Analysis of co-variance (ANCOVA) of means of kinesthetic perception between experimental and control group of under 14 yrs school students

	Experimental Group		Control Group	Source of Variance	S S	df	MSS	F ratio
Pre-test	Mean	1.3375	1.250	A	0.077	1	0.077	0.044
	SD	1.0228	1.5686	W	66.628	38	1.753	
	SEM	0.2287	0.3507					
Post-test	Mean	0.9438	1.3225	A	1.435	1	1.435	1.119
	SD	0.9669	1.2761	W	48.707	38	1.282	
	SEM	0.2162	0.2853					
Adjusted Post-test	Mean	0.912	1.354	A	1.956	1	1.956	5.440*
				W	13.305	37	0.360	

*Significant at 0.05 level of Confidence**.** $F_{0.05}$ (1, 38) = 4.10, $F_{0.05}$ (1, 37) = 4.10

From the above Table- 2, it is clearly evident that there are insignificant paired mean differences exist between pretest (0.044) and post-test (1.119) of control and experimental group. And significant paired mean differences exist in case of adjusted post-test (5.44) of under 14 yrs school students. The required tabulated F value (4.10) is set at 0.05 level of confidence.

Table 3: Paired adjusted final means difference of kinesthetic perception (post hoc-test) between experimental and control group of under 14 school students

Kinesthetic perception	Experimental Group	Control Group	Mean Difference	Critical Difference at 5% level
	1.354	0.912	**0.44***	0.42

***Significant at 0.05 level of Confidence.

This Table-3 shows that significant differences exist on adjusted post-test between mean scores of experimental and control group (0.44) in respect of under 14 yrs students. Where the critical difference is 0.42 set at 0.05 level of confidence.

Table 4: Analysis of co-variance (ANCOVA) of means of self-concept between experimental and control group of under 12 yrs school students

		Experimental Group	Control Group	S V	S S	df	MSS	F ratio
Pre-test	Mean	121.800	121.15	A	4.225	1	4.225	0.007
	SD	30.17	17.13	W	22871.75	38	601.888	
	SEM	6.7462	3.8303					
Post-test	Mean	124.950	141.70	A	2805.625	1	2805.625	8.050*
	SD	21.0215	23.5584	W	13243.15	38	348.504	
	SEM	4.7005	5.2678					
Adjusted Post-test	Mean	144.00	121.550	A	5050.395	1	5050.395	10.996*
				W	16535.10	37	459.309	

*Significant at 0.05 level of Confidence. $F_{0.05}$ (1, 38) = 4.10, $F_{0.05}$ (1, 37) = 4.10

From the above Table-4, it is clearly evident that there are insignificant paired mean differences exist between pretest (0.007) of control and experimental group. And significant paired mean differences exist in case of post-test (8.05) and adjusted post-test (10.996) of under 12 yrs school students. The required tabulated F value (4.10) set at 0.05 level of confidence.

Table 5: Paired adjusted final means difference in self-concept (Post hoc-test) between experimental and control group of under 12 yrs school students

Self-Concept	Experimental Group	Control Group	Mean Difference	Critical Difference at 5% level
	144.0000	121.5500	**22.801***	20.80

*Significant at 0.05 level of confidence.

This Table-5 shows that significant differences exist on adjusted post-test between mean scores of Experimental and Control group (22.801) in respect of under 12 yrs students. Where the critical difference is 20.8 set at 0.05 level of confidence.

Table 6: Analysis of co-variance of means of self-concept between experimental and control group of under 14 yrs school students

		Experimental Group	Control Group	SS		df	MSS	F ratio
Pre-test	Mean	121.8000	121.150	A	4.225	1	4.225	0.007
	SD	21.95	19.82	W	22871.75	38	601.888	
	SEM	4.9081	4.4318					
Post-test	Mean	141.7000	121.550	A	4060.225	1	4060.225	8.146*
	SD	20.1533	15.9719	W	18941.15	38	498.451	
	SEM	4.5064	3.5714					
Adjusted Post-test	Mean	145.9500	124.950	A	4424.562	1	4424.562	13.121*
				W	12476.68	37	337.208	

*Significant at 0.05 level of Confidence. $F_{0.05}$ (1, 38) = 4.10, $F_{0.05}$ (1, 37) = 4.10

From the above Table-6, it is clearly evident that there are insignificant paired mean differences exist between pre-test (0.007) of control and experimental group. And significant paired mean differences exist in case of post-test (8.146) and adjusted post-test (13.121) of under 14 yrs school students. The required tabulated F value (4.10) set at 0.05 level of confidence.

Table 7: Paired adjusted final means difference of self-concept (Post hoc-test) between experimental and control group of under 14 yrs school students

Experimental Group	Control Group	Mean Difference	Critical Difference
145.9500	124.9500	**21.036***	19.02

*Significant at 0.05 level of Confidence.

This Table-7 shows that significant differences exist on adjusted post-test between mean scores of experimental and control group (21.036) in respect of under 14 yrs students. Where the critical difference is 19.02 set at 0.05 level of confidence

4. Discussion of Findings

The result of the present study shows that significant differences are found in respect of kinesthetic perception and self-concept for the effect of six weeks healthy physical activity programmes among school students.

Normal growth and developmental changes may influence an alter body image, such as the physical and hormonal changes that occur during puberty and adolescence. The onset of puberty involves the emergence of secondary sex characteristics in the

male client. While these are normal expected physical changes that occur during the adolescent stage, these changes impact an adolescent's body image, thus affect self-concept. In later adulthood, physical and hormonal changes present as thinning and graying of hair, wrinkling and loss of skin elasticity, weight gain, decrease in hearing and vision, and decrease in mobility.

Due to researcher difference function statistically, ratios improve incident among students in the experimental group in the factors of cognitive sense – kinesthetic under discussion for the control group to the positive impact of the proposed programme using exercises diverse perceptions of the sense of mobility under discussion. The development of responses motor that occur as a result of capacity development sense – kinetics under discussion, where little (Mona, 1998) [23] that the process of motor learning is sensory input and cognition has the same importance of the ability to move easily and agile as any individual cannot be skillful in athletic

As per the present study is concerned, under 12 yrs students are slightly differences gain in Kinesthetic perception was registered by healthy activity programme. This may be because of the maturity in respect of age, their involvement in physical and sporting activities as it is a way to anticipate the happenings for which every child eager to participate in physical and sporting activities if offered by a given facilities and proper equipments to participate whole heartedly in different sporting programmes. In other words, in contrast to the spindles, which are facilitatory (i.e., they cause contraction) stimulation of the tendon organs resulted in inhibition of the muscles in which they are located.

On the other side, significant differences were existed among 14 yrs students in respect of kinesthetic perception. For this may be the age is gradually acquired higher physical fitness and their neuro-physiological demands were more. Kinesthetic perception depends upon the neuro physiological and psychological factors. In the age of 14 years the neuro physiological factor develops and continues still puberty. Other effecting factors of kinesthetic perception were experiences, fitness, tolerance to fatigue, illness, distraction, mood, poor vision and poor hearing. Kinesthetic perception is increased which may be due to effect of aging on the myelination of neurons. That person participating in the physical activity can increase his neurotic activity in the brain and can increase brain function of performance better academically. Jevas and Yan (2005) [24] who studied that possible reason for the delay in response could be due to actual degeneration and axonal shrinkage occurring which advancing age which not only prolonged loss of coordination with advancing age due to inability to maintain fine balance between agonist and antagonist muscles especially during rapid movements.

The results in the present study reveal that the overall self-concept is positively and significantly differ due to their healthy activity programme in respect of under 12 and 14 yrs students. Effect indicates that the student's educational, intellectual and temperamental self-concept increase apart from their regular achievement.

Self-Concept is made up of two images, one is self-image and other one is a reflection of how significantly others value one self. The physical aspect of self-concept relates to that which is concrete: what we look like, our sex, height, weight, etc.; what kind of clothes we wear; what kind of car we drive; what kind of home we live in; and so forth. When children develop their positive attitude / view through healthy activity programmes towards their school, teachers, educational activities, automatically they take interest in studies which could have enhanced their educational self-concept. All these factors may have contributed for student's growth and developmental pattern While one study **(**Cathcart & Gumpert, 1986) [25] argues that mental counseling has the greatest effect on self-concept, another (Rill, Baiocchi, Hopper, Denker, & Olson, 2009) [26] suggests that peer interaction is the most significant contributing factor to affect self-concept, while another (Lanza-Kaduce & Webb, 1992) [27] claims that the messages received from the family have the greatest bearing on self-concept. The result of the present study is consonance with the study conducted by Margaret Schneider (2008).

5. Conclusion

Conclusions are made that healthy activity programme have a significant effect for maintaining and improving kinesthetic perception and self-concept of 12 year, 14 year school students. Findings associated that kinesthetic perception and student self-concept are increased according to chronological growth of age due to effect of healthy activity programme.

6. Guidance for Implementation

Implementation is associated that if continuously maintain the healthy activity programme then kinesthetic perception and self-concept may be developed and healthful citizens may be created.

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