



ISSN: 2456-0057
IJPNPE 2021; 6(1): 198-200
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www.journalofsports.com
Received: 08-11-2020
Accepted: 12-12-2020

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Effect of physical exercises on balance and co-ordination among special children

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Abstract

The purpose of the study was to investigate the changes on balance and co-ordination after twelve weeks of physical exercises among special children. To achieve the purpose of the study, thirty special children from G.V. Special School, Chidambaram, Tamil Nadu, India were selected as subjects at random in the age group of 13 years to 19 years. The selected subjects were randomly assigned into two groups of 15 each, in which, group – I (n = 15) underwent physical exercises, group – II (n = 15) acted as control which did not participate in any special training. The training programme was carried out six days per week for twelve weeks. Prior to and after the training period the subjects were tested for balance and co-ordination. Balance was assessed by balance beam test and co-ordination was measured by power simple co-ordination test. The statistical tool used for the present study was independent 'T' test. The result of the study reveals significant changes on balance and co-ordination of the special children after twelve weeks of physical exercises.

Keywords: Physical exercises, balance and co-ordination special children

Introduction

According to Hartman *et al.*, (2010) ^[1] physical activity is “any bodily movement produced by skeletal muscles which results in energy expenditure and the energy expenditure is measured in kilocalories. In our daily life the physical activity can be classified into occupational, sports, conditioning, household, or other activities”.

Physical fitness is established with distinctly characteristic strengths, which are correlated with the quality or competency involved with physical movements. Good physical fitness refers to a person whose heart, blood vessels, lungs and muscular tissues can exert tremendous functions, which makes the person not only do routine work efficiently but also enjoy the life leisurely and cope with unexpected conditions as well.

Disability

Disabilities of every kind are documented with myriad names throughout the human history. The society behaved malevolently to people with disability. Families tend to saw persons with intellectual disabilities as a liability. Greek and Roman philosophers valuing the reasoning abilities, criticized the individuals with intellectual disabilities as mere humans. Hippocrates (who lived in late fifth century BCE) writings included the view on the mental retardation. He believed that such a state of abnormal condition was caused by an imbalance within the four humors. The mental retardation (MR) is a developmental disability, the signs of which may appear during the growth of the child, or not be visible until late childhood.

World Health Organization in its World Disability Report (2011) ^[4] says, “Disability is an umbrella term, covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations. Thus disability is a complex phenomenon, reflecting an interaction between features of a person's body and features of the society in which a person lives”.

The Persons with Disabilities (Equal opportunities, Protection of rights and Full participation) Act, 1995 shorty known as PWD act, 1995 defines a person with disability as “a person

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suffering from not less than forty per cent of any disability as certified by a medical authority". The types of disabilities mentioned in the act are "blindness, low vision, leprosy-cured, hearing impairment, locomotor disability, mental retardation and mental illness" respectively (Ministry of Law, Justice & Company Affairs, 1996).

Methodology

Subjects and Variables

To achieve the purpose of the study, thirty special children from G.V. Special School, Chidambaram, Tamil Nadu, India were selected as subjects at random in the age group of 13 years to 19 years. The selected subjects were randomly assigned into two groups of 15 each, in which, group – I (n = 15) underwent physical exercises, group – II (n = 15) acted as control which did not participate in any special training. The training programme was carried out six days per week for twelve weeks. Prior to and after the training period the subjects were tested for balance and co-ordination. Balance was assessed by balance beam test and co-ordination was measured by power simple co-ordination test.

Training program

During the training period, the experimental groups underwent physical exercise three days a week for twelve weeks. The physical exercise included in this training program were gross motor exercises, fine motor exercises and adoptable exercises respectively. The training program was conducted in the morning sessions from 7`O`clock onwards.

Statistical procedure

The data collected from the experimental and control groups on selected dependent variables was statistically analyzed to find out the significant difference by applying independent 'T' test. In all the cases the level of confidence was fixed at 0.05 level for significance.

Results

The pre and post test data collected from the experimental and control groups on balance and co-ordination were statistically analyzed by dependent 'T' test and the results are presented in table-1.

Table 1: Analysis of 'T' Test on Balance and Co-ordination of Experimental and Control Groups

Group	Test	N	Mean	SD	DM	't' – ratio
Balance						
Physical exercises	Pre Test	15	4.04	0.42	0.37	3.24*
	Post Test	15	4.41	0.40		
Control Group	Pre Test	15	3.95	0.53	0.05	0.59
	Post Test	15	4.00	0.53		
Co-ordination						
Physical exercises	Pre Test	15	12.57	9.33	0.65	6.16*
	Post Test	15	13.23	9.63		
Control Group	Pre Test	15	12.30	8.97	0.11	1.26
	Post Test	15	12.42	9.06		

* Required table value for significance at 0.05 level of confidence for df of 14 is 2.15

*Significant at .05 level of confidence

The obtained 't' ratio value is 3.24 of balance was greater than the required table value of 2.15 for the degrees of freedom 14 at 0.05 level of confidence. Hence it was concluded that due to the effect of twelve weeks of physical exercises the balance of the subjects was significantly improved.

The obtained 't' ratio value is 6.16 of co-ordination was greater than the required table value of 2.15 for the degrees of freedom 14 at 0.05 level of confidence. Hence it was concluded that due to the effect of twelve weeks of physical exercises co-ordination of the subjects was significantly improved.

The pre and post-test means on balance and co-ordination of physical exercises and control groups are graphically presented in figure-1.

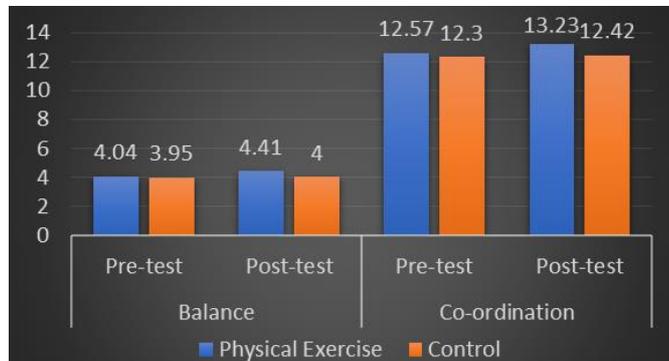


Fig 1: The pre and post-test means on balance and co-ordination of physical exercises and Control Groups

Discussion

The subjects were able to demonstrate improvement in balance and coordination by performing physical exercises training program. In the same lines Seagraves *et al.*, (2004) investigated the effectiveness of a school-based physical [3] education progressive resistance-training program on physical functioning and work productivity with 14 high school participants with mental retardation. Yilmaz *et al.*, (2009) [5] studied 16 children with trainable and educable MR and demonstrated the efficacy of a 10 week water exercise and swimming program as an effective therapeutic tool in the management of mentally retarded children. A highly significant improvement was found in developing physical fitness of children with MR. Findings support the claim that the adoption of dynamic exercise program in relatively inactive people may be beneficial. The improvements in muscle endurance, muscle strength, coordination, functional mobility and balance may have additional positive benefits. A study done by Telles (1995) showed that the use of yoga for rehabilitation has diverse applications. Yoga practice benefited mentally handicapped subjects by improving their mental ability, also the motor co-ordination and social skills. Physically handicapped subjects had a restoration of some degree of functional ability after practicing yoga.

Conclusion It was concluded that the selected dependent variables such as balance and co-ordination of disable children were significantly altered due to physical exercises.

References

- Hartman JE, Boezen HM, De Greef MH, Bossenbroek L, ten Hacken NH. Consequences of physical inactivity in chronic obstructive pulmonary disease. Expert review of respiratory medicine 2010;4(6):735-45.
- Idles S, Nagarathna R, Nagendra HR. Improvement in Visual Perception Following Yoga Training. Journal of Indian Psychology 1995;13(1):30-32.
- Seagraves F, Horvat M, Franklin C. Effects of a SchoolBased Program on Physical Function and Work Productivity in Individuals with Mental Retardation. Clin

Kinesiol 2004;58:18.

4. World Health Organization. World report on disability 2011. Geneva. World Health Organization 2011.
5. Yilmaz *et al.* 'The effects of water exercise and swimming program as an effective therapeutic tool in the management of mentally retarded children Journal of Human Kinetics. 2009, pp. 105-111.