Role of Physical Activity on the Span of Attention on Preteen Boys with Learning Disabilities

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Abstract

Physical activity plays an important role in the health, well-being and quality of life. Aim of the study was to find the effect of physical activities on the attention span of preteen male children. It was hypothesized that exposure to physical activity would improve the attention span of preteen boys with learning difficulties. The sample of 50 boys selected from the age group 9-12 years were randomly divided into two groups-Experimental group and Control group, with 25 in each group Physical activities interventions were given over a seven-week period with duration of 45 minutes for every session. The Number Cancellation Test was used to test the attention span of the subjects. Statistical analysis was conducted using Analysis of Variance (ANOVA) to examine if there was a marked difference between the mean values within the group and between the groups for the post-test. From the above analysis, it can be inferred that the Experimental Group with the intervention of physical activity indicated a significant improvement in the attention of male children with learning difficulties.

Keywords: physical activity, attention span, preteen boys, learning disabilities.

Introduction

Physical activity has benefits at every age, in particular, it helps kids keep their heart and lungs strong and healthy, become more flexible, develop strong bones, maintain a healthy body weight, lower the risk of several diseases and health problems, improve their mood and self-esteem, do better in school, and feel better about their bodies. The type and purpose of active play undergoes continuous change all through the different stages of childhood. While infants usually use play to begin and hone voluntary motor control, pre-school children use play as a type of exercise. Running, climbing and other such activities not only serve to develop their muscles, strength, general movement and endurance but are also helpful in cognitive and emotional development.

Regulation of arousal, development of a sense of mastery, enhanced social cognitions (negotiation, hierarchy and emotional awareness) and gains in spatial cognition are all potential mechanisms through which physical play (exercise and rough and tumble) may influence cognitive outcomes. There is

also evidence that active, playground-type breaks can help young children concentrate better at subsequent sedentary tasks. Such activities improve learning on three levels: It optimizes your mindset, by improving alertness, attention, and motivation.

Physical activity plays an important role in the health, well-being and quality of life. It also helps to prevent chronic diseases like cancer, Type 2 diabetes and heart disease later in life. Physical inactivity is the fourth leading risk factor for global mortality. Increasing levels of physical inactivity are seen worldwide. Globally, 1 in 3 adults is not active enough. However, given a supportive environment, increasing levels of physical activity bring health benefits across age groups. In 2013, WHO Member States agreed to reduce physical inactivity by 10% by 2025 in the framework of the "Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020".

Attention is a basic component of our biology, present even at birth. Our orienting reflexes help us determine which events in our environment need to be attended to, a process that aids in our ability to survive. When it comes to studying or learning, one of the most important ingredients is focus and attention. Attention is the process or act of concentrating on one or more environmental factors that your five senses experience.

A learning disability is a neurological disorder. In simple terms, a learning disability results from a difference in the way a person's brain is "wired." Children with learning disabilities are as smart as or smarter than their peers. But they may have difficulty reading, writing, spelling, reasoning, recalling and/or organizing information if left to figure things out by themselves or if taught in conventional ways.

Review of Literature

Beron W. Z. Tan.et al(2013) examined the effects of physical activity on the attention span and health-related Quality of Life (HRQoL) of autism spectrum disorder (ASD) children in Singapore. Male participants (N = 12) aged 2-6 years, diagnosed with ASD were randomly assigned to either physical activity or non-physical activity group. In the physical activity group, participants were administered 8 tri-cycling sessions; both groups of participants were measured for their attention span, and their parents completed the HRQoL questionnaires. Results indicate that as the exercise increases, the physical activity group demonstrated increasingly longer duration of attention span. These results extend the findings that physical

activity enhances cognition of ASD children and support its consideration into the early intervention programs.

Buchele Harris H. et .al.(2018) study examined the effects of 4-week, daily 6-minute Coordinated-Bilateral Physical Activity (CBPA) breaks in the classroom on attention and concentration in school-aged children (n=116) in fifth grade from two elementary schools. They were assigned to three groups: two intervention groups (n= 60) and one control group (n = 56). All three groups were pre and post-tested with the d2 Test of Attention (d2 test). One intervention group (n = 31) took part in six minutes of daily classroom-based CBPA, five days per week for four weeks without CBPA breaks. A 2 × 3 ANOVA was conducted, followed by the post hoc comparisons. The CBPA showed significant increases in processing speed (F1 = 6.876, p = .010), focused attention (F1 = 10.688, p = .002), concentration performance (F1 = 26.46, p = .000), and attention span (F1 = 14.090, p = .000) over the control group. These indicated improved attention and concentration due to daily brief coordinated-bilateral activities.

Objective

To find out the effect of physical activities on the attention span of male children with difficulties in learning.

Hypothesis

It was hypothesized that exposure to physical activity would improve the attention span of preteen boys with learning difficulties.

Methodology

The purpose of the study was to find out the effect of physical activity on the attention span among boys with difficulties in learning. The researcher screened 70 children with Developmental Pathological Checklist (DPCL) for Children to find children with learning difficulties and studied the relationship. The sample of 50 boys was selected from the age group 9-12 years. All the boys were from a similar socio-economic background of a middle-class to upper-middle-class background. The selected subjects were randomly divided into two groups-Experimental group and Control group, with 25 in each group. Physical activities interventions were given over a seven-week period with duration of 45 minutes for every session. The Number Cancellation Test was used to test the

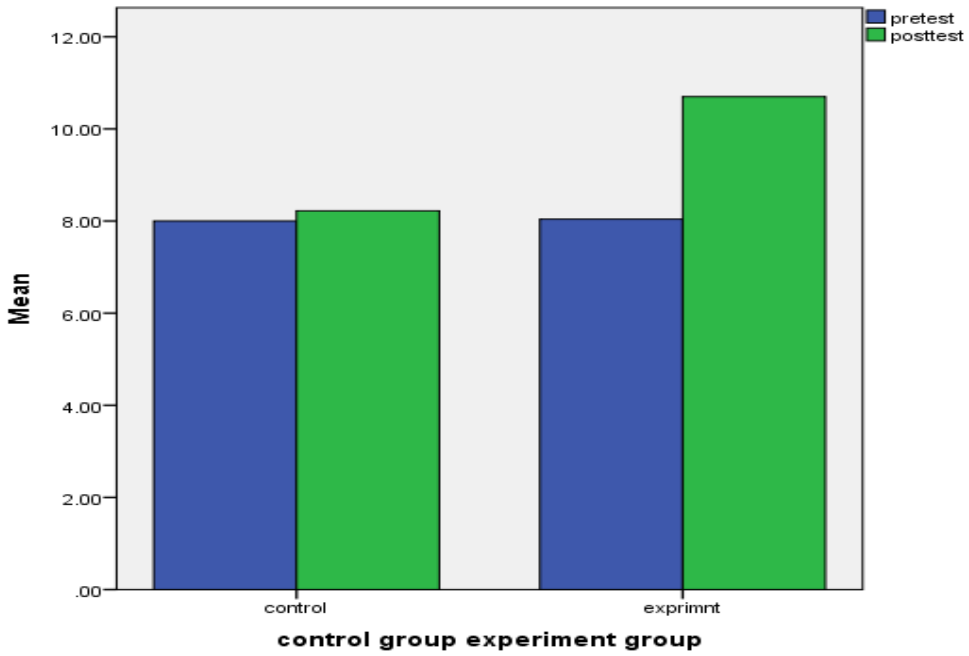
attention span of the subjects. The number cancellation task worksheet consisted of an array of random numbers 1-9 in 36 rows and 24 columns. The average of two trials was taken as the index of attention. Therefore, a higher score indicated a higher attention span.

Results and Discussions

The arithmetic average or mean takes into account all of the available information in computing the central tendency of a frequency distribution.

Figure-I

Pre-test and post-test mean scores for Control Group and Experimental Group



The above graph showed that the pre-test mean score of the Experimental Group on the level of Attention was 8.0000 and that of the Control Group was 8.0400. The post-test mean score showed a significant difference with the values at 10.70 for the Experimental Group and 8.22 for the Control Group. This established that there was no significant difference between the Experimental Group and Control Group, indicating that the process of assigning subjects to the group by randomization was ideal.

Statistical analysis was conducted using Analysis of Variance (ANOVA) to examine if there was a marked difference between the mean values within the group and between the groups for the post-test.

The Basic Descriptive Statistics of a single variable-Attention span in the demographic samples of the control group (n=25) and the experimental group (n=25).

ANOVA Table[a]

			Sum of Squares	df	Mean Square
pretest * control group experiment group	Between Groups	(Combined)	.020	1	.020
	Within Groups		11.460	48	.239
	Total		11.480	49	
posttest * control group experiment group	Between Groups	(Combined)	76.880	1	76.880
	Within Groups		33.040	48	.688
	Total		109.920	49	

ANOVA Table[a]

			F	Sig.
pretest * control group experiment group	Between Groups	(Combined)	.084	.773
	Within Groups			
	Total			
posttest * control group experiment group	Between Groups	(Combined)	111.690	.000
	Within Groups			
	Total			

The physical activity intervention resulted in different mean values of the attention span in preteen boys was found to be F (1, 48) = 111.69, p = .000. This implies that the physical activity intervention is effective in enhancing attention span of pre-teen boys' sample.

Conclusion

From the above analysis, it can be inferred that the Experimental Group with the intervention of physical activity indicated a significant improvement in the attention of male children with learning difficulties. This inference was drawn based on the pre-test value of was 8.00 and post-test value of 10.70 corresponding to the Experimental Group. In comparison, the pre-test value

8.04 and post-test value of 8.22 obtained for the Control Group indicates that though there was an improvement in the Control Group, it was not as marked as that of the Experimental Group with the intervention of physical activity. This study is in line with Tabatha A, et.al (2007). Physical activity provides a fun-filled medium of intervention to enhance attention span in children with difficulties in learning.

References

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