

## Role of sports participation on attention and concentration among children

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### ABSTRACT

Sports participation promotes the positive impact on children's physical and mental health. Sports participation enhances the cognitive functioning like, memory, concentration, behaviour and academic achievement for children. Children who participate in sports have shown improved academic achievement, higher self-esteem, fewer behavioral problems, and healthier psychological adjustment. Physical movement affects the brain's physiology and is associated with improved attention and better information processing, storage, and retrieval. Studies in the western countries have suggested a positive relationship between sports participation and attention and concentration. However, there are not many studies in this direction in India. It is evident that results from the west cannot be directly applied to Indian context because of cultural skepticism. Keeping above points in view present study try to explore whether participation in sports enhances children attention and concentration. 30 children who are participating in competitive sports and 30 children who are not participating in any kind of competitive sports were selected using convenient sampling technique. Dr. Howard Andrew Knox's Knox cube imitation test was used to measure the attention and concentration of the children. This study will help to enrich the theoretical understanding of sports participation and Attention and concentration enhancement. The results were discussed in this paper.

**Keywords:** *Sports, Attention and Concentration, Children*

Children Sports programs ranging from the community level to more advanced sports schools and academies, improvement in sports skills is also a major motivation for children and adolescents to be involved in Sports. (Coelho e Silva & Malina 2009; Siegel et al. 2009; Ewing & Seefeldt 1988). Given the importance placed upon learning and refining Sports skills this will help children to learning skills from Sports and utilize in the day to day life.

Actually sports participation will starts from childhood. Initially children join Sports for fun, enjoyment and this is the primary motivation to join Sports. (Coelho e Silva MJ, Malina RM (2009, in press)) Meanings attached to the concept of fun vary with age. It can refer to simply

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## Role of Sports Participation on Attention and Concentration Among Children

running around with teammates at young ages, to being on a team with friends or making new friends, to competing with peers of the same ability, and also to winning.

Daniel Memmert Ruprecht-Karl-University Heidelberg, done a study on Developing creative thinking in a gifted sports enrichment program and the crucial role of attention processes, A six-month longitudinal study (N533) proved the influence of a diversified sports enrichment program on the development of creative thinking in team ball sports among gifted children. A contrast between a gifted control group and a non-gifted treatment group showed that the creative performance of the gifted children significantly improved. Children who participate in sport have shown improved academic achievement, higher self-esteem, fewer behavioral problems, and healthier psychological adjustment.

Physical movement affects the brain's physiology and is associated with improved attention and better information processing, storage, and retrieval. In addition, increasing energy levels outside the classroom is associated with higher attention levels in the classroom. Physical exertion leads to short-term relaxation, enhanced creativity and memory, better mood, and improved problem-solving abilities.(Douyon M, Chavez M, Bunte D 2010)

Research has shown that physical movement can affect the brain's physiology by increasing cerebral capillary growth, blood flow, oxygenation, production of neurotrophins, growth of nerve cells in the hippocampus, neurotransmitter levels, development of nerve connections, density of neural network, and brain tissue volume. These changes may be associated with improved attention; improved information processing, storage, and retrieval; enhanced coping; enhanced positive affect; and reduced sensations of cravings and pain. (CDC. the Association between School-Based Physical Activity2010)

Linder's research suggests that increased energy levels and time outside of the classroom—both byproducts of playing sport—may give relief from boredom, resulting in higher attention levels during classroom time. (Linder KJ. 1999) Research by the Canadian Fitness and Lifestyle Research Institute has shown that sports participation causes short-term relaxation, accompanied by improved concentration, enhanced creativity and memory, improved mood, and enhanced problem-solving abilities.(Canadian Fitness and Lifestyle Institute) Researcher has discovered that well-practiced volleyball players are able to shift their attention to some important action in the periphery of their visual field-without actually moving their eyes in that direction.(Castiello, U., & Umilta, C 1992)

Participation in sports helps children improve of attention and concentration. Studies have suggested a positive relationship between sports participation and attention and concentration improvement. However, there are not many studies in this direction in India. It is evident that results cannot be generalized because of cultural skepticism. Keeping above points in view present study try to explore whether participation in sports influence on children attention and concentration ability.

## **METHODOLOGY**

### *Problem*

- Role of sports participation on Attention and Concentration among children.

### *Aim*

- Aim of the study is to explore the Role of sports participation on attention and concentration among children.

## Role of Sports Participation on Attention and Concentration Among Children

### Objectives

The objective of the study is as follows:

1. To study the role of sports participation on children attention and concentration ability.
2. Compare the attention and concentration ability of Sports and non Sports children.

### Hypothesis

Based on previous studies the following hypothesis was found:

1. There is a gender difference between Girls and boys on Attention and Concentration ability.
2. There is a difference between sports and non sports children on Attention and Concentration ability.

### Operational Definitions

1. **Sports children:** children who are actively participating in competitive sports with minimum 2 to 5 years.
2. **Non sports children:** children are not actively participating in any kind of competitive sports.
3. **Attention:** Attention is concentration of mental ability. Attention allows our cognitive processes to take in selected aspects of our sensory world in an efficient and accurate manner.(Fernandez-Duque, D., & Johnson, M.L. 2002)
4. **Concentration:** “Concentration is the ability to focus one’s attention on the task at hand and thereby not be disturbed or affected by irrelevant external and internal stimuli” (Williams, J. M. 2006)

### Research Design

The present study is comparative in nature. Dr. Howard Andrew Knox’s Knox Cube Imitation test(1913) is used to measure the attention and concentration ability of the children

### Sample

The sample consists of two groups. 30 sports children and 30 non sports children. The subject for the current research consist 60 children. Out of 60 subjects 30 Sports children i.e. actively participating in competitive sports and 30 non sports children who are not actively participating in any competitive sports. Subjects were taken from different schools, Sports clubs situated in different parts of Bangalore city.

Sports children		Non sports children	
Boys	Girls	Boys	Girls
15	15	15	15

### The inclusive criteria for sports children

1. Actively participating sports.
2. School going children
3. Age range from 10 to 14 years.

### The inclusive criteria for non sports children:

1. Actively not participating in any kind of sports.
2. School going children
3. Age range from 9 to 12 years.

## Role of Sports Participation on Attention and Concentration Among Children

### Tools

1. Information schedule: This elicits children age, socio economic status, education, level of participation in sports, kind of sports, years of participation and etc.
2. Knox Cube Imitation test: The test was developed by Dr. Howard Andrew Knox (1913). This test will assess the attention and concentration of the children. This is a performance test.

### Procedure

Subjects are consists of 9 to 12 years children from Bengaluru. Firstly subject were made sit comfortably. Subject is asked to examine the cubes presented to him/her. Four of the five cubes are placed in a row about 2" apart from one another. With First cube being the one from the left of the subject, the four cubes between the second and third cube of the row. We have taken the fifth cube and instruct the subject as follows: "I shall present a series of tapping using this cube on the other four cubes which are in front of you. After each presentation I shall ask you present the taps in the same order".

With the ready signal researcher presenting the taps as per the prepared schedule of presentation approximately with a rate of one tap per second. Always I have told begin with the tapping with the cube placed to the left of the subject. After tapping the cubes, kept the fifth cube back in front of the four cubes arranged in a row, between the second and the third cubes. The subjects have repeated the same tapping for 12 numbers of trials. The test has proceeded till the subject fails to repeat the same tapping in four successive trials.

## RESULTS AND DISCUSSION

*Table 1: Shows the Attention and concentration scores of the sports children and non sports children*

No of children	Sports Children		Non Sports Children		t-value
	Mean	SD	Mean	SD	
60	13.33	8.95	9.03	6.67	2.03

*Graph 1 shows the distribution mean score of Sports and Non sports children.*

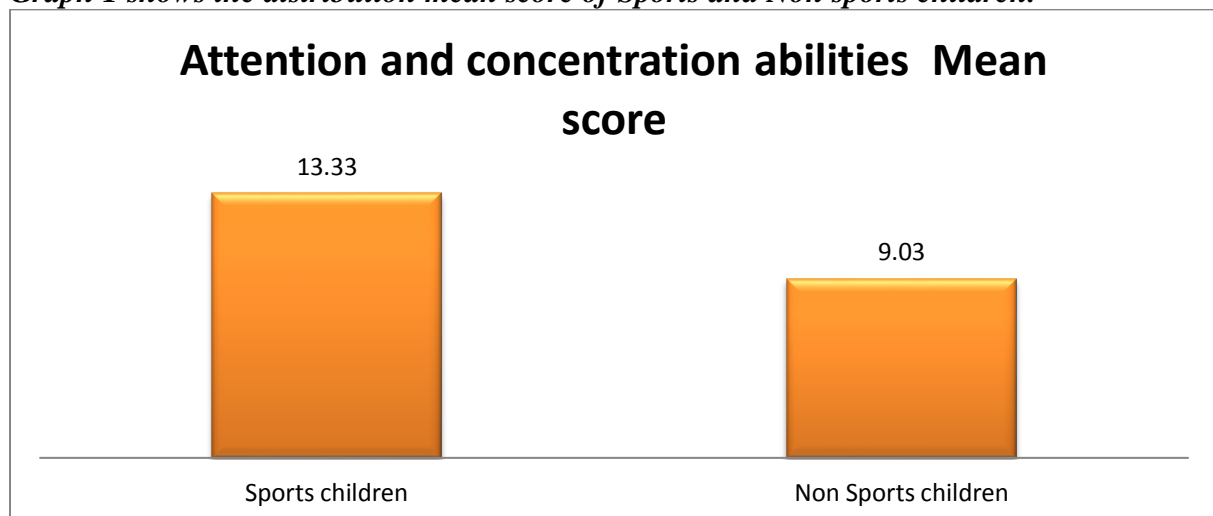


Table 1 shows the children mean scores. Sports children scored better compare to non sports children. The Mean score of Sports children is 13.33 and 9.03 is the mean score of non sports children. To find out is there any differences between the two methods comparisons were made. The obtained t-score show that there is a significant difference between Sports children

## Role of Sports Participation on Attention and Concentration Among Children

and non sports children. Research studies shows that participation in sports enhances the attention and concentration abilities. Linder's research suggests that increased energy levels and time outside of the classroom—both byproducts of playing sport—may give relief from boredom, resulting in higher attention levels during classroom time. (Linder KJ. 1999). Probably participation in sports positively influenced on their cognitive functions.

*Table 2 shows the scores of attention and concentration abilities of the boys and Girls.*

Methods	Girls		Boys		t value
60	Mean	SD	Mean	SD	1.85
	10.2	7.99	8.9	6.28	

Table 2 shows that attention and concentration abilities of the Girls and Boys. The mean score of Girls is 10.2 and Boys mean score is 8.9. The result shows that there is gender difference on attention and concentration abilities. Ewing & Seefeldt, (1997) reported that participating sports compare to boys girls are less. But Compare to Boys girls has better cognitive abilities like, Memory, Attention and concentration and learning etc. Based on this report our study also indicating that compare to Boys girls attention and concentration abilities are more.

### CONCLUSION

1. Sports children attention and concentration abilities is high compare to Non sports children. The hypothesis proved. The t value is 2.03 and there is significant difference in the two groups.
2. There is a difference between Boys and Girls attention and concentration abilities. The hypothesis proved and t value is 1.85 and there is significant difference in the Gender.

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## Role of Sports Participation on Attention and Concentration Among Children

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### ***Conflict of Interest***

The author declared no conflict of interests.

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