



## INFLUENCE OF PHYSICAL AND EXTRA CURRICULAR ACTIVITIES ON COGNITIVE ANXIETY AMONG SCHOOL BOYS

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### ABSTRACT

The purpose of this study was to find out the relationship between level of cognitive anxiety of physical and extra-curricular activities of government Hr.Sec. School, Sirumugaipudur, Coimbatore. To achieve the purpose, 90 boys from 11 to 12<sup>th</sup> Standard students were selected as subjects at random and their age ranged from 16 to 18 years. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects (n=90) were randomly assigned in to three equal groups of thirty students each. The groups were assigned as physical activities group (PAG), Extra - curricular activities group (ECAG) and control group (CG) in an equivalent manner. The criterion measures were Cognitive Anxiety. Data were collected by using Cognitive Test Anxiety scale (Appendix A; Cassady & Johnson, 2002) is a 27-item measure focused on only the cognitive domain of test anxiety, Cassady, using a four point Likert-type, was used to obtain data from respondents who gave consent to the study. To find out the influence of physical activities and extra-curricular activities on cognitive anxiety among the school boys, analysis of covariance (ANCOVA) was used to test the adjusted mean difference among the groups. It was observed that according to the students surveyed, practicing the physical activities group significantly reduced the cognitive anxiety. The physical activities group significantly reduced the cognitive anxiety of students in the of government Hr.Sec. School, Sirumugaipudur, Coimbatore, when compared to extra - curricular activities group and control group. Therefore, it was concluded that physical activities reduced the cognitive anxiety and that the effect depends on the specific activities in which the student is involved.

**KEYWORDS:** Cognitive Anxiety and Physical and Extra-curricular Activities.

### INTRODUCTION

Cognitive anxiety is the mental component of anxiety. Many students experience some level of stress while preparing for an exam. Appropriate levels of stress can enhance students' memory, attention, motivation, and can lead to improved test performance Salend, (2011). Physical activity stimulates brain chemicals such as dopamine, norepinephrine, and serotonin. Regular exercise is important for good physical and mental health. Exercise can help stimulate parts of brain that aren't as responsive when feeling depressed. It also promotes the release of feel-good brain chemicals, Ryan, C, M (2016). It helps distract from worries and improve confidence. In other hand yoga is continue to be popular among school children in India through physical education classes it brings enormous benefits by enhancing the students strength co-ordination body awareness concentration, positive self- image, manages stress.

Physical and extracurricular activities more holistic benefits associated with participation in physical activity enhance psychological health outcomes create tremendous effect to promote academic performance in students. Extra-curricular activities offer various health benefits and also cut down the stress. Cognitively-engaging exercise appears to have a stronger effect than non-engaging exercise on children's executive function, Best, J.R, (2010).

### MATERIALS AND METHODS

The purpose of this study was to find out the relationship between level of cognitive anxiety of physical and extra-curricular activities of government Hr.Sec. School, Sirumugaipudur, Coimbatore. To achieve the purpose, 90 boys from 11 to 12<sup>th</sup> Standard students were selected as subjects at random and their age ranged from 16 to 18 years. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects (n=90) were randomly assigned in to three equal groups of thirty students each. The groups were assigned as physical activities group (PAG), Extra - curricular activities group (ECAG) and control group (CG) in an equivalent manner. The criterion measures were Cognitive Anxiety. Data were collected by using Cognitive Test Anxiety scale (Appendix A; Cassady & Johnson, 2002) is a 27-item measure focused on only the cognitive domain of test anxiety, Cassady, using a four point Likert-type, was used to obtain data from respondents who gave consent to the study. To find out the influence of physical activities and extra-curricular activities on Cognitive Anxiety of government Hr.Sec. School, Sirumugaipudur, Coimbatore, analysis of covariance (ANCOVA) (Rothstein, 1985) was used to test the adjusted mean difference among the groups.

### RESULTS AND DISCUSSIONS ON FINDINGS

The findings pertaining to analysis of co-

variance between physical activities, extra-curricular activities and control group on Cognitive Anxiety of school boys for pre-post test respectively have been

presented in table No.I.

**TABLE - I**  
**ANALYSIS OF COVARIANCE ON COGNITIVE ANXIETY OF PHYSICAL ACTIVITIES GROUP AND EXTR CURRICULAR ACTIVITIES GROUP AND CONTROL GROUP**

Test	Physical activities Group-I	Extra-Curricular Activities Group-I	Control Group	Source of Variances	Sum of Squares	Df	Mean Squares	Obtained 'F' Ratio
Pre Test Mean	41.47	41.93	41.13	Between	4.84	2	4.84	0.34
SD	3.62	3.89	3.80	Within	14.24	87	14.24	
Post Test Mean	30.77	38.97	42.87	Between	1144.30	2	1144.30	46.05*
SD	6.25	4.60	3.79	Within	24.85	87	24.85	
Adjusted Post Test Mean	30.79	38.68	43.12	Between	2336.63	2	1168.31	62.88*
				Within	1597.99	86	18.58	

\* Significant at 0.05 level of confidence.

(The table value required for significance at 0.05 level of confidence with df 2 and 87 and 2 and 86 were 3.11 and 3.13 respectively).

Table-I shows that the pre-test means on cognitive anxiety level of the physical activities group-I, extra-curricular activities group – II and control group are  $41.47 \pm 3.62$ ,  $41.93 \pm 3.89$  and  $41.13 \pm 3.80$  respectively. The obtained 'F' ratio value of 0.34 for pre-test score of physical activities group-I, extra-curricular activities group – II and control group on cognitive anxiety is less than the required table value of 3.11 for significance with df 2 and 87 at 0.05 level of confidence. The post-test mean values of cognitive anxiety level for physical activities group-I, extra-curricular activities group – II and control group are  $30.77 \pm 6.25$ ,  $38.97 \pm 4.60$ , and  $42.87 \pm 3.79$  respectively. The obtained 'F' ratio value of 46.05 for post-test scores of physical activities group-I, extra-curricular activities group – II and control group is greater than the required table value

of 3.11 for significance with df 2 and 87 at 0.05 level of confidence. The adjusted post-test mean values of physical activities group-I, extra-curricular activities group – II and control group are 30.79, 38.68 and 43.12 respectively. The obtained 'F' ratio value of 62.88 for adjusted post-test scores of physical activities group-I, extra-curricular activities group – II and control group – III is higher than the required table value of 3.13 for significance with df 2 and 86 at 0.05 level of confidence. The above statistical analysis indicates that there is a significant reduction of cognitive anxiety level of after the training period. Further to determine which of the paired means has a significant difference, the Scheffe's test was applied. The result of the follow-up test is presented in Table-II.

**TABLE-II**  
**SCHEFFE'S POST HOC TEST FOR THE DIFFERENCE BETWEEN ADJUSTED POST-TEST MEAN OF COGNITIVE ANXIETY OF SCHOOL BOYS**

S. No.	Adjusted Post-test Means			Mean Difference	Confidence Interval
	Physical activities Group-I	Extra-Curricular Activities Group-II	Control Group		
1.	30.79	38.68	-	7.89*	2.84
2.	30.79	-	43.12	12.33*	
3.	-	38.68	43.12	4.44*	

\*Significant at 0.05 level of confidence.

Table-II shows that the adjusted post-test mean difference in cognitive anxiety level between physical activities group-1 and extra-curricular training group-2, and control group – III, physical activities group-1 and control group, extra-curricular activities group and control group are 7.89, 12.33 and 4.44, which were greater than the confidence interval value of 2.84 at 0.05 level of confidence.

It may be concluded from the results of the study that physical activities group-1 and extra-curricular activities training group-2 have significantly reduced the cognitive anxiety level when compared with the control group. Moreover, the physical activities group-I has reduced in the cognitive level than the extra-curricular activities training group-II and control group - III.

### DISCUSSION ON FINDING

Participation physical activities and extra-curricular activities always motivate desire to success willing to take risk ability to increase the effort and concentration as the task increases. From the results of the study it was revealed that the physical activities and extra-curricular activities there showed significant differences in cognitive anxiety than the control group. Moreover, the physical activities group-I has reduced in the cognitive level than the extra-curricular activities training group-II and control group -III. These results coincide with the findings of (Courneya & Hellsten, 1998; Saklofske et al, 2007) who had concluded that physical activities had decreased in cognitive anxiety.

### CONCLUSIONS

It was observed that according to the students surveyed, practicing the physical activities significantly reduced the cognitive anxiety. The physical activities

group significantly reduced the cognitive anxiety of school boys when compared to extra - curricular activities group and control group. Therefore, it was concluded that physical activities reduced the cognitive anxiety and that the effect depends on the specific activities in which the student are involved.

### REFERENCES

1. Cassady, J. C., & Johnson, R. E. (2002). Cognitive test anxiety and academic performance. *Contemporary Educational Psychology*, 27, 270–295.
2. Spielberger, C.D. (1983). *State Trait Anxiety. Mind Garden Inc., California.*
3. Courneya, K. S., & Hellsten, L.-A. M. (1998). Personality correlates of exercise behaviour, motives, barriers and preferences: an application of the five-factor model. *Personality and Individual Differences*, 24(5), 623-633.
4. Salend, S. J. (2011). Addressing test anxiety. *Teaching Exceptional Children*, 44(2), 58-68.
5. Hardy, L., Jones, G., & Gould, D. (1996). *Understanding Psychological Preparation for Sport: Theory and Practice of Elite Performers. Wiley, Chichester.*
6. Stephens, L. J., & Schaben, L. A. (2002). The effect of interscholastic physical participation on academic achievement of middle level school activities [Electronic version]. *National Association of Secondary School Principals Bulletin*, 86, 34-42.