



Effect of Sports and Extra Curricular Activities on Cognitive Anxiety of School Boys

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Abstract

The purpose of this study was to find out the relationship between level of cognitive anxiety of sports and extra-curricular activities students in the Stanes A.I. Hr.Sec. School, Coonoor. To achieve the purpose, 90 boys from 9 to 12th Standard students were selected as subjects at random and their age ranged from 15 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 into three equal groups of thirty students each. The groups were assigned as Sports Participation Group (SPG), 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. This is a 27-item measure focused only on the cognitive domain of test anxiety, Cassady, using a four point Likert-type. This method was used to obtain data from respondents who gave consent to the study. To find out the influence of sports activities and extra-curricular activities on Cognitive Anxiety of students, analysis of covariance (ANCOVA) was used to test the adjusted mean difference among the groups. The Sports Participation Group showed significant reduction in the Cognitive Anxiety when compared to Extra - Curricular Activities Group and Control Group. Therefore, it was concluded that sports activities reduced the Cognitive Anxiety and that the effect depends on the specific activities in which the student is involved.

Keywords: Cognitive Anxiety and Sports and Extra-curricular Activities.

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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). Anxiety is a subjective feeling of tension, apprehension, nervousness, and worry associated with arousal of the nervous system (Spielberger, 1983). Anxiety is a psychological condition in which people experience extreme distress and worry and nervousness and a common cause for poor academic performance before and during examinations among students. The students who participate in co-curricular activities are three times more likely to have a grade point average of 3.0 or better than students who do not participate in any co-curricular activity (Stephen and Schaben, 2002).

Participation in individual or team sports, and extra-curricular activities promote the all-round development of children. It can be sports, debate, drama, dance and other social events. Research indicates that participation in sports and extracurricular activities

affects students' academic performance. While participating in physical activity, sports and extracurricular activities, children potentially profit from a variety of physical and psychological health benefits. The ability to cope with pressure and anxiety is an integral part of sports, particularly among elite athletes (Hardy, Jones, & Gould, 1996; Orlick & Partington, 1988). More specifically, studies have been conducted assessing the effects of specific sports and extracurricular activities on academic performance. Participation in sports is associated with positive emotions such as feeling energetic, being efficient, organised and systematic (Courneya & Hellsten, 1998; Saklofske et al, 2007). "Physical activity can have an impact on cognitive skills and attitudes and academic behavior, all of which are important components of improved academic performance. These include enhanced concentration and attention as well as improved classroom behavior," according to a 2010 essay by Charles Basch of Columbia University. He summarized how exercise may affect executive functioning, increased oxygen flow to the brain, increased brain neurotransmitters and increased brain-derived neurotrophins that support neuronal differentiation and survival in the developing brain. Neurotrophins assure the survival of neurons in areas responsible for learning, memory, and higher thinking.

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Materials and Methods

The purpose of this study was to find out the relationship between level of cognitive anxiety of sports and extra-curricular activities students in the Stanes A.I. Hr.Sec. School Coonoor, Tamilnadu, India. To achieve the purpose, 90 boys from 9 to 12th Standard students were selected as subjects at random and their age ranged from 15 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 into three equal groups of thirty students each. The groups were assigned as Sports Participation Group (SPG),

Extra - Curricular Activities Group (ECAG) and Control Group (CG) in an equivalent manner. Data were collected by using Cognitive Test Anxiety scale (Appendix A; Cassady & Johnson, 2002) which 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 sports activities and extra-curricular activities on Cognitive Anxiety, analysis of covariance (ANCOVA) (Rothstein, 1985) was used to test the adjusted mean difference among the groups.

Results

Table I. Analysis of covariance on cognitive anxiety of sports training group and extracurricular activities group and control group

Test	Sports Training 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 Sports Training Group-I, Extra-Curricular Activities Group – II and Control Group are 41.47 ± 3.62 , 41.93 ± 3.89 and 41.13 ± 3.80 respectively. The obtained 'F' ratio value of 0.34 for pre-test score of Sports Training 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 Sports Training Group-I, Extra-Curricular Activities Group – II and Control Group are 30.77 ± 6.25 , 38.97 ± 4.60 , and 42.87 ± 3.79 respectively. The obtained 'F' ratio value of 46.05 for post-test scores of Sports Training 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 Sports Training 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 Sports Training Group-I, Extra-Curricular Activities Group – II and Control Group 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 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

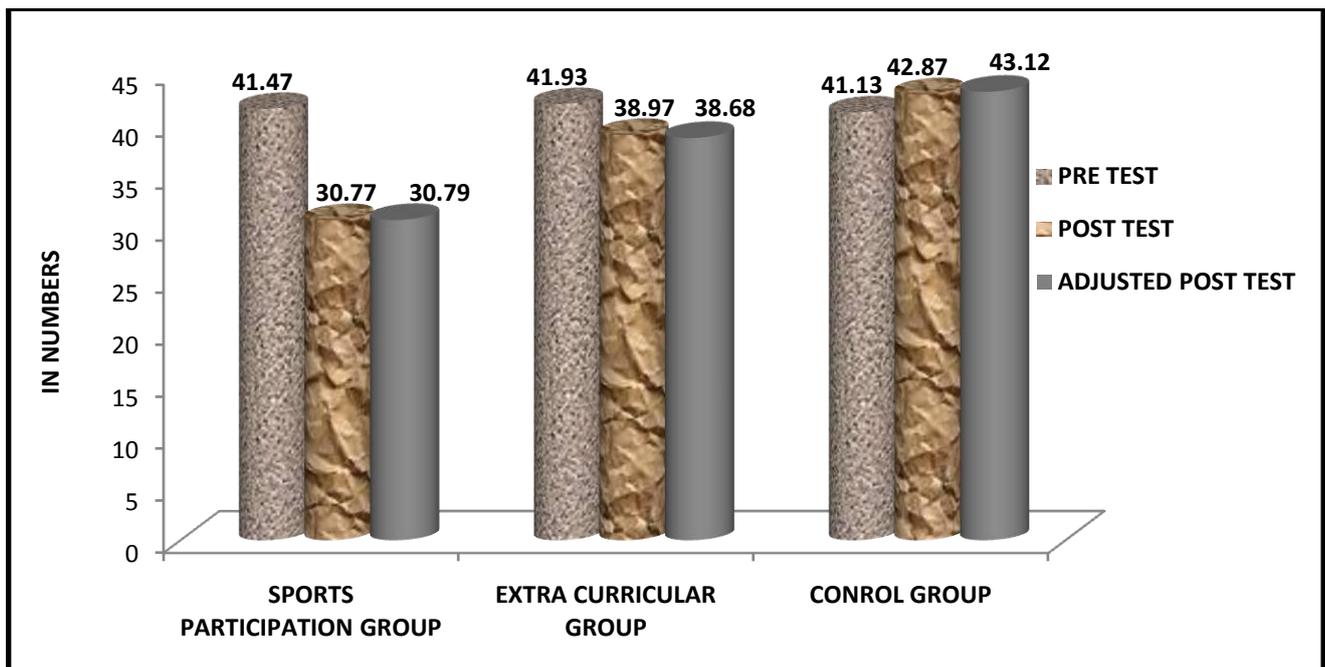
S. No.	Adjusted Post-test Means			Mean Difference	Confidence Interval
	Sports Training Group-I	Extra-Curricular Activities Group-II	Control Group		
1.	30.79	38.68	-	7.89*	2.84
2.	30.79	-	43.12	12.33*	
3.	-	38.68	43.12	4.44*	

*Significant at 0.05 level of confidence.

Table-III shows that the adjusted post-test mean difference in cognitive anxiety level between Sports Training Group-1 and Extra-Curricular Training Group-2, and Control Group, Sports Training 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 Sports Training Group-1 and Extra-Curricular Activities Training Group-2 have significantly reduced the cognitive anxiety level when compared with the Control Group. Moreover, the Sports Training Group-1 has reduced in the cognitive level than the Extra-Curricular Activities Training Group-2 and Control Group.

Figure I. Mean values of sports training extracurricular activities and control group of cognitive anxiety of school boys



Discussion on Finding

Participation in sports activities and extra-curricular activities always motivates the desire to succeed, willingness to take risk and the ability to increase the effort and concentration as the task increases. From the results of the study, it was revealed that the Sports Activities and Extra-Curricular Activities showed significant differences in Cognitive Anxiety than the Control Group. Moreover, the Sports Training Group-1 had a reduced Cognitive Anxiety level than the Extra-Curricular Activities Training Group-2 and Control

Group. These results coincide with the findings of (Courneya & Hellsten, 1998; Saklofske et al, 2007) who had concluded that sports activities had decreased Cognitive Anxiety.

Conclusions

It was observed that according to the students surveyed, participating in sports activities significantly reduced the Cognitive Anxiety. The Sports Activities Group significantly showed reduced levels in the Cognitive Anxiety of students when compared to Extra -

Curricular Activities Group and Control Group. Therefore, it was concluded that sports activities reduced the Cognitive Anxiety and that the effect depended on the specific activities in which the student was involved.

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