Effect of Game-Specific Training with and without Mental Imagery on Selected Psychological Variables among Hockey Players

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Abstract

The purpose of the study was to find out the effect of game-specific training with and without mental imagery on selected psychological among hockey players. To achieve the purpose of the present study, forty five men Hockey players from Sholapur district, Maharastra, India were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into three equal groups of fifteen each. Group I acted as Experimental Group I (Game-specific Training), Group II acted as Experimental Group II (Game-specific Training with Mental Imagery Training) Group III acted as Control Group. The duration of experimental period was 12 weeks. After the experimental treatment, all the forty five subjects were tested on their psychological variables. Anger and confusion were assessed using Brunel University mood scale. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using dependent 't' test and Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, Scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses. The game-specific training with mental imagery group had shown significant improvement in all the selected psychological variables than the game-specific training group and control group.**

Introduction

In recent times, numerous studies have examined the relationship between imagery and sport performance and have found that overall imagery has positive effects on many levels. Weinberg et al. (2003) point out that there have been many quantitative and qualitative studies that have shown that the systematic use of imagery was associated with enhanced performance not only in motor performance and skill acquisition, but improvements were also found in confidence, concentration, and decreased anxiety.

These aspects of the mental imagery process need to be constantly practiced in order to elicit results. Even though individual differences exist in mental imagery ability, generally, better imagery control correlates to better performance in the motor skill. Another approach is to combine the techniques of mental imagery with physical practice of the intended skill labelled visual – motor behavior rehearsal. Upon visiting almost any fitness center, at least two things will be evident. Either people do not perform the squat exercise at all, or many of those who do, perform it incorrectly. This is due to false information and improper instruction.

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Another problem is that people learn to squat while looking at their refection in a mirror. Although mirrors do provide a modicum of necessary feedback as to how one is progressing in terms of appearance, they are an inappropriate orientation for observing the execution of a motor task, especially one as complex as the squat exercise. Learning to squat in front of a mirror is not consistent with the notion of acquiring a cognitive representation through observational learning. A cognitive representation has two basic functions. Hockey is the game which needs more mental preparation.

Methodology

The purpose of the study was to find out the effect of game-specific training with and without mental imagery on selected psychological among hockey **players.** To achieve the purpose of the present study, forty five men Hockey players from Sholapur district, Maharastra, India were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into three equal groups of fifteen each. Group I acted as Experimental Group I (Game-specific Training), Group II acted as Experimental Group II (Game-specific Training with Mental Imagery Training) Group III acted as Control Group. The duration of experimental period was 12 weeks. After the experimental treatment, all the forty five subjects were tested on their psychological variables**.** Anger and

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confusion were assessed using Brunel University mood scale. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using dependent 't' test and Analysis of Covariance (ANCOVA) to find out the

significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, Scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses.

Results

Table I. Computation of analysis of covariance of mean of game-specific training, game-specific training with mental imagery and control groups on anger

	GSTG	GSTWMIG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	79.93	78.53	82.73	BG	137.20	2	68.60	1.43
				WG	2007.60	42	47.80	
Post-Test Means	67.53	58.93	82.40	BG	4228.31	2	2114.15	65.47*
				WG	1356.26	42	32.29	
Adjusted Post-Test Means	67.54	58.97	82.35	BG	3929.39	2	1964.69	59.42*
				WG	1355.44	41	33.06	

An examination of table - I indicated that the pre test means of game-specific training, game-specific training with mental imagery and control groups were 79.93, 78.53 and 82.73 respectively. The obtained F-ratio for the pre-test was 1.43 and the table F-ratio was 3.22. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that there were no significant difference between the experimental and control groups indicating that the process of randomization of the groups was perfect while assigning the subjects to groups. The post-test means of the game-specific training, game-specific training with mental imagery and control groups were 67.53, 58.93 and 82.40 respectively. The obtained F-ratio for the post-test was 65.47 and the table F-ratio was 3.22. Hence the post-test mean F-ratio was significant at 0.05

level of confidence for the degree of freedom 2 and 42. This proved that the differences between the post test means of the subjects were significant. The adjusted post-test means of the game-specific training, game-specific training with mental imagery and control groups were 67.54, 58.97 and 82.35 respectively. The obtained F-ratio for the adjusted post-test means was 59.42 and the table F-ratio was 3.23. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 41. This proved that there was a significant difference among the means due to the experimental trainings on anger. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's post hoc test. The results were presented in Table-II.

Table II. The scheffe's test for the differences between the adjusted post test paired means on anger

Adjusted Post-test means			Mean Difference	Required CI
GSTG	GSTWMIG	CG		
67.54	58.97	---	6.09*	
67.54	---	82.35	5.80*	5.34
---	58.97	82.35	11.89*	

Significant at 0.05 level of confidence

The multiple comparisons showed in Table II proved that there existed significant differences between the adjusted means of game-specific training and game-specific training with mental imagery group (6.09),

game-specific training and control group (5.80), game-specific training with mental imagery and control group (11.89) at 0.05 level of confidence with the confidence interval value of 5.34. The pre, post and adjusted means

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on anger were presented through bar diagram for better understanding of the results of this study in Figure-I.

Figure I. Pre post and adjusted post test differences of the, game-specific training, game-specific training with mental imagery and control groups on anger
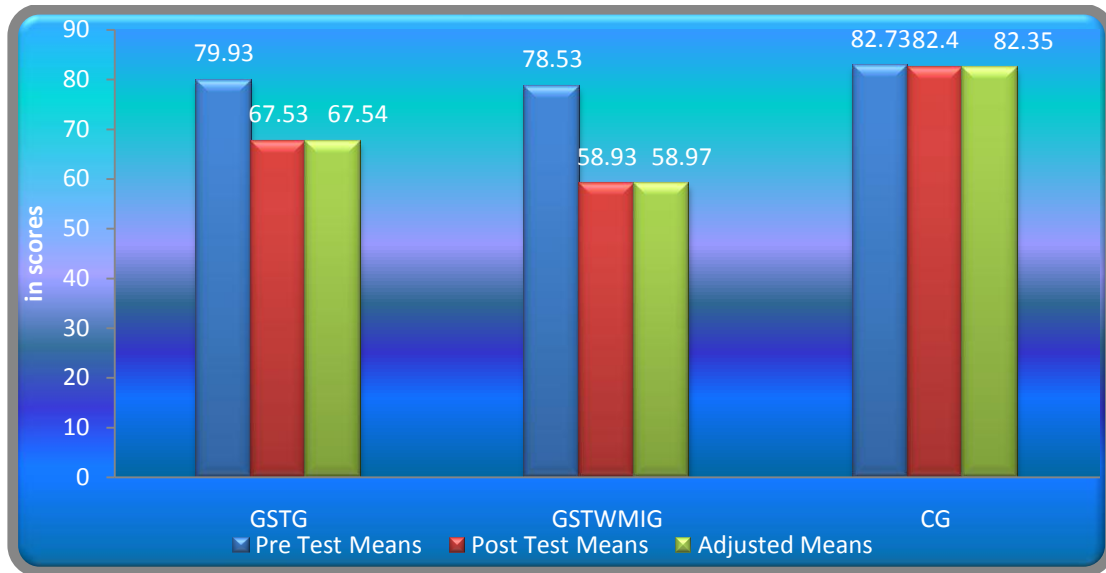

Table III. Computation of analysis of covariance of mean of game-specific training, game-specific training with mental imagery and control groups on confusion

	GSTG	GSTWMIG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	80.46	81.53	84.46	BG	128.71	2	64.35	1.27
				WG	2125.20	42	50.60	
Post-Test Means	72.26	50.93	84.00	BG	8430.93	2	4215.46	66.46*
				WG	2663.86	42	63.42	
Adjusted Post-Test Means	72.49	51.01	83.69	BG	8118.25	2	4059.12	63.36*
				WG	2626.27	41	64.05	

An examination of table - III indicated that the pretest means of game-specific training, game-specific training with mental imagery and control groups were 80.46, 81.53 and 84.46 respectively. The obtained F-ratio for the pre-test was 1.27 and the table F-ratio was 3.22. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that there were no significant difference between the experimental and control groups indicating that the process of randomization of the groups was perfect while assigning the subjects to groups. The post-test means of the game-specific training, game-specific training with mental imagery and control groups were 72.26, 50.93 and 84.00 respectively. The obtained F-ratio for the post-test was 66.46 and the table F-ratio was 3.22. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that the differences between the post test means of the subjects were significant. The adjusted post-test means of the game-specific training, game-specific training with mental imagery and control groups were 72.49, 51.01 and 83.69 respectively. The obtained F-ratio for the adjusted post-test means was 63.36 and the table F-ratio was 3.23. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 41. This proved that

there was a significant difference among the means due to the experimental trainings on confusion. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's post hoc test. The results were presented in Table-IV.

Table IV. The scheffe's test for the differences between the adjusted post test paired means on confusion

Adjusted Post-test means			Mean Difference	Required CI
GSTG	**GSTWMIG**	**CG**		
72.49	51.01	---	10.35*	
72.49	---	83.69	19.14*	9.00
---	51.01	83.69	29.49*	

* Significant at 0.05 level of confidence

The multiple comparisons showed in Table IV proved that there existed significant differences between the adjusted means of game-specific training and game-specific training with mental imagery group (10.35), game-specific training and control group (19.14), game-specific training with mental imagery and control group (29.49) at 0.05 level of confidence with the confidence interval value of 9.00. The pre, post and adjusted means on confusion were presented through bar diagram for better understanding of the results of this study in Figure II.

Figure II. Pre post and adjusted post test differences of the, game-specific training, game-specific training with mental imagery and control groups on confusion
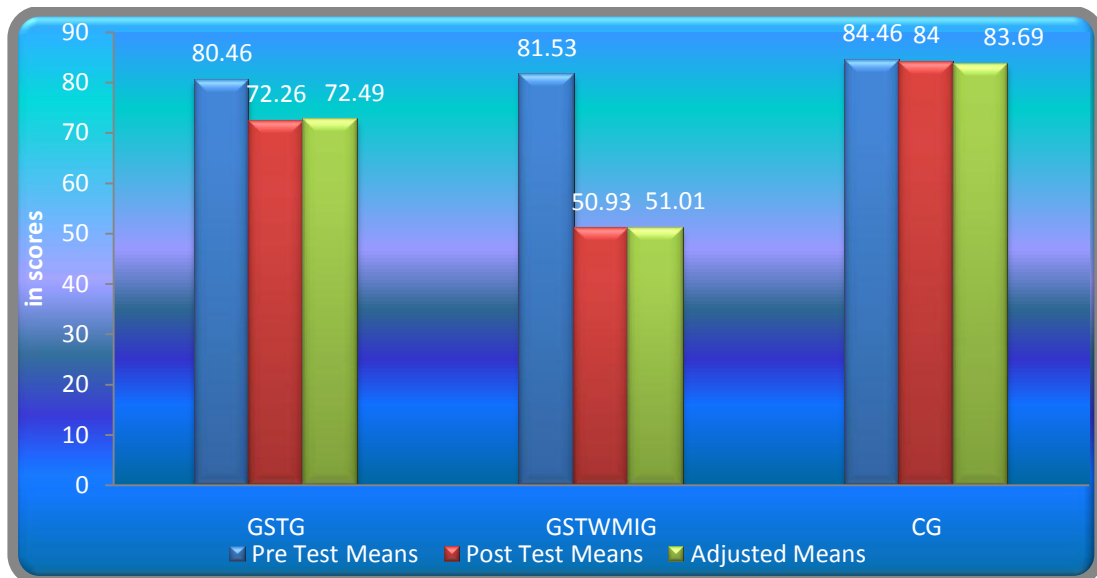
Conclusion

The game-specific training with mental imagery group had shown significant improvement in all the selected psychological variables than the game-specific training group and control group**.**

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