

Analysis of Game Specific Skill Practices on Hand-Eye Coordination and Balance of Cricket Players

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Abstract

Game-specific skill practices are simply fitness and performance training designed specifically for athletic performance enhancement. If the training is done in the correct way it can be very beneficial, if not, it can be detrimental. The main objective of this study was to investigate and assess the analysis of Game Specific Skill Practices on hand-eye coordination and balance of cricket players. Thirty club cricket players (18-25 years of age) were randomly selected and divided into experimental and control groups of fifteen. Only the experimental group was treated with the Game Specific Skill Practices intervention for eight weeks, and the control group was kept without any specific training except regular cricket practices. Both group's pre and post-test data were collected before and after the training schedule. The pertaining data of hand-eye coordination and balance were collected using a standardized test namely, ball transfer test and strok stand test. There were found significant differences among the pre and post-test means comparison of hand-eye coordination and balance between experimental and control groups ($P < 0.05$). Appropriate Game Specific Skill Practices can be treated to develop hand-eye coordination and balance and may impact the improvement of the performance of cricket players and other similar games. Game Specific Skill Practices can be introduced to other parameters of psycho-motor also in order to improve the performances of cricket players at different levels.

Keywords: Cricket, Game specific skill practices, Hand-eye coordination, Balance, Psycho-motor.

1. Introduction

The sport of cricket played between two teams of eleven players, is a highly demanding and multifaceted game that places significant emphasis on both physical fitness and technical skill execution. In the ever-evolving landscape of international cricket, players are subjected to more intense schedules, with longer seasons, frequent touring, and the demand for peak performance in a highly competitive environment. To meet these demands, modern cricket requires players to excel in various domains, including batting and bowling skills, agility, strength endurance, speed, and power. Cricket is a bat-and-ball team sport played between two teams of eleven players each, with the objective of scoring more runs than the opposing team. It is typically played on a pitch with a rectangular 22-yard-long wicket, and the game involves various aspects, including batting, bowling, and fielding (International Cricket Council 2021). Bowling in cricket refers to the act of delivering the ball to the batsman to dismiss them. Bowlers use various techniques, including pace, spin, and swing, to outwit the batsmen and take wickets (Espnricinfo, 2021). Batting in

cricket involves the act of the batsman using a cricket bat to face the bowler's deliveries and score runs. The primary goal is to protect the wicket while accumulating runs through well-timed shots and placement (BBC Sport 2021). In the realm of cricket, the synergy between hand-eye coordination and balance holds paramount significance. As a sport demanding precision, timing, and swift reactions, cricketers heavily rely on the seamless connection between their visual perception and hand movements. The ability to maintain balance, especially during dynamic actions such as batting, bowling, or fielding, becomes a pivotal factor in executing techniques effectively. Whether it's a batsman aligning their shot with precision or a bowler maintaining equilibrium during the delivery stride, the harmony between hand-eye coordination and balance distinguishes exceptional cricketing performances on the field.

2. Objectives

The objective of this study was to investigate and assess the analysis of Game Specific Skill Practices on hand-eye coordination and balance of cricket players

3. Methodology

This study follows an experimental design with two groups: Group 1 (Experimental) and Group 2 (Control). The purpose of the study is to assess the analysis of Game Specific Skill Practices on hand-eye coordination and balance of cricket players using a standardized test namely the ball transfer test and strok stand test. The study involves a pre-test and post-test design with an 8-week training intervention. A total of 30 club cricket players from Manipur aged between 18-25 years were recruited for the study. The participants were divided into two groups. Group 1 (Experimental): This group consisted of 15 participants who underwent Game Specific Skill Practices. Group 2 (Control): This group also had 15 participants, but they did not receive any training and acted as a control group. Group 1 (Experimental) underwent 8 weeks of Game Specific Skill Practices, focusing on hand-eye coordination and balance. ANCOVA was employed to compare the post-training scores of Group 1 (Experimental) and Group 2 (Control) while controlling for the pre-training scores as covariates through statistical software, such as SPSS.

4. Results and Interpretation

The analysis of covariance on the pre and post-test of hand-eye coordination and balance of the Game Specific Skill Practices group and the control group has been conducted and is presented in Tables I and II.

TABLE I ANALYSIS OF COVARIANCE OF THE DATA ON HAND-EYE COORDINATION OF PRE AND POST-TEST SCORES OF GAME SPECIFIC SKILL PRACTICES AND CONTROL GROUPS

TEST	GAME SPECIFIC GROUP	CONTROL GROUP	SOURCE OF VARIANCE	SUM OF SQUARES	df	MEAN SQUARE	'F' ratio
Pre-test Mean	27.55	27.53	Between	0.003	1	0.003	0.001
S. D	2.27	1.94	Within	124.89	28	4.46	
Post-test Mean	24.73	27.02	Between	39.33	1	39.33	8.30*

S. D	2.17	2.18	Within	132.59	28	4.74	
Adjusted Post Mean	24.72	27.03	Between	39.98	1	39.98	
			Within	36.17	27	1.34	29.84*

*Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 1 and 27 and 1 and 28 are 4.21 and 4.20 respectively).

Table I displays that the initial mean scores for hand-eye coordination in both the Game Specific Skill Practices Group and control group were 27.55 and 27.53, respectively. The pre-test "F" ratio of 0.001 falls below the critical value of 4.20 for significance at the 0.05 confidence level. In contrast, the post-test hand-eye coordination means for the Game Specific Skill Practices group and control group were 24.73 and 27.02, respectively, with a post-test "F" ratio of 8.30, surpassing the significance threshold. Additionally, the adjusted post-test averages for the Game Specific Skill Practices group and control group were 24.72 and 27.03 for hand-eye coordination. The adjusted post-test "F" ratio of 29.84 exceeded the critical value of 4.21 for significance at the 0.05 confidence level.

For a better understanding of the result, the pre-test, post-test and adjusted post-test mean for hand-eye coordination were presented below through a graphical chart in figure-I.

Figure I

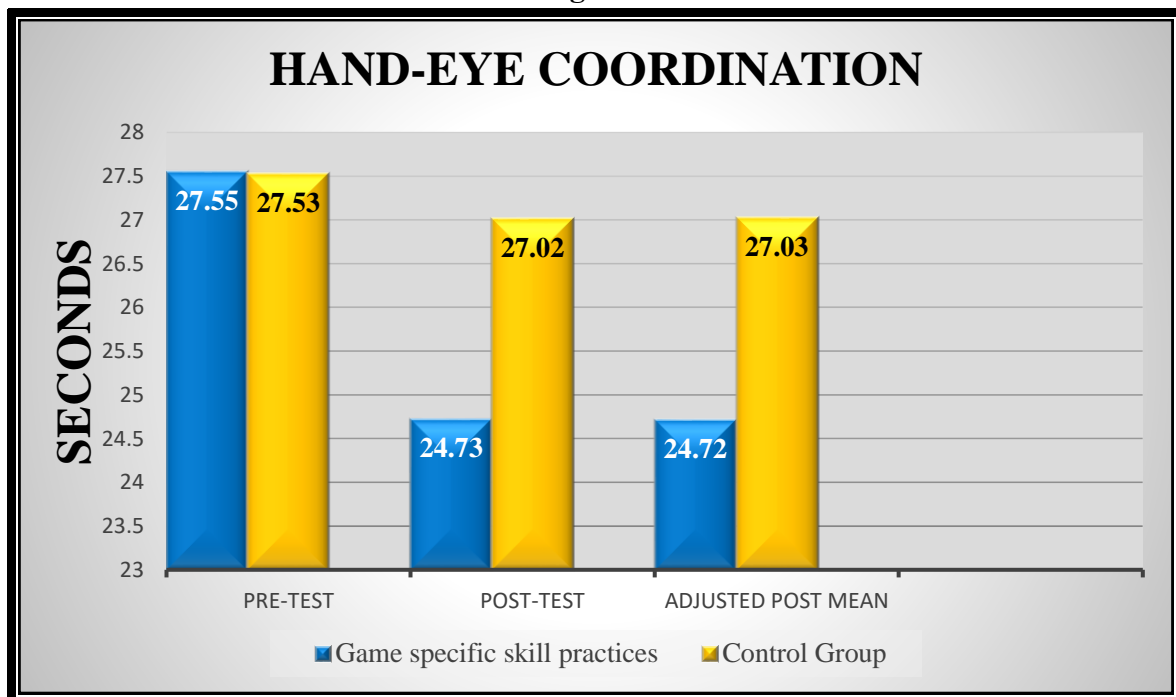


TABLE II ANALYSIS OF COVARIANCE OF THE DATA ON BALANCE OF PRE AND POST-TEST SCORES OF GAME SPECIFIC SKILL PRACTICES AND CONTROL GROUPS

TEST	GAME SPECIFIC GROUP	CONTROL GROUP	SOURCE OF VARIANCE	SUM OF SQUARES	df	MEAN SQUARE	'F' ratio
Pre-test							

Mean	13.30	13.88	Between	2.55	1	2.55	1.57
S.D	1.41	1.13	Within	45.55	28	1.63	
Post-test							
Mean	15.28	13.97	Between	12.83	1	12.83	5.69*
S.D	1.40	1.59	Within	63.15	28	2.25	
Adjusted Post							
Mean	15.49	13.76	Between	21.04	1	21.04	14.10*
			Within	40.29	27	1.49	

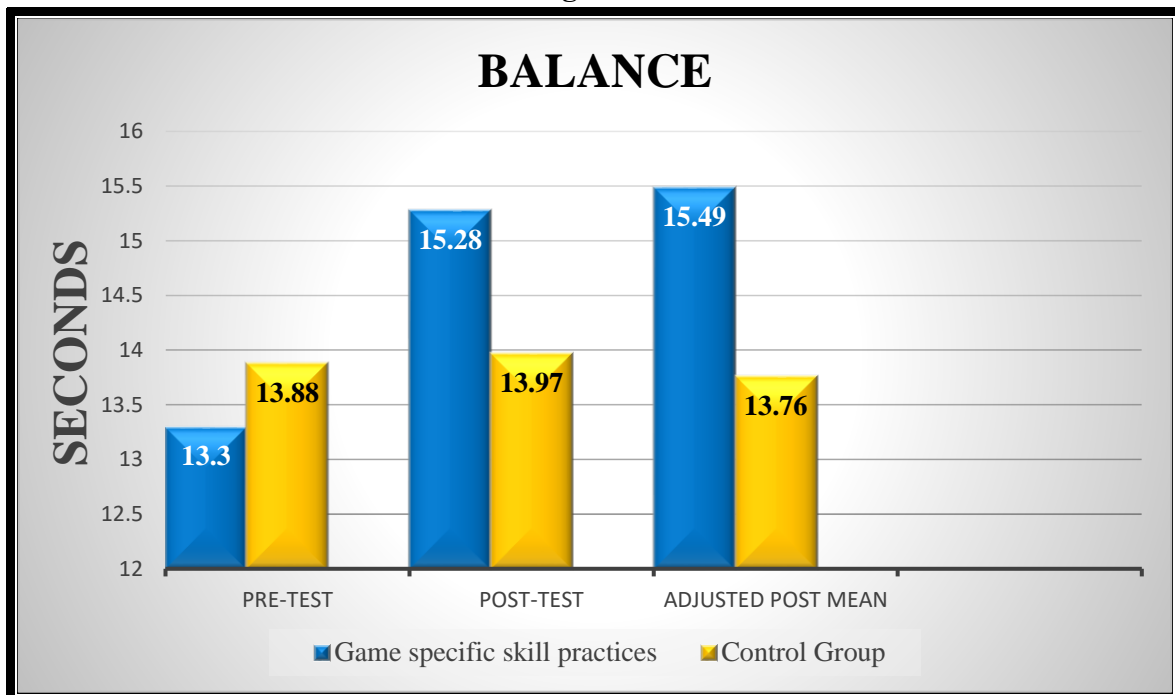
* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 1 and 27 and 1 and 28 are 4.21 and 4.20 respectively).

In Table II, displays that the initial mean scores for balance in both the Game Specific Skill Practices group and control group were 13.30 and 13.88, respectively. The pre-test "F" ratio of 1.57 is below the critical value of 4.20 for significance at the 0.05 confidence level in balance. Conversely, the post-test balance means for the Game Specific Skill Practices group and control group were 15.28 and 13.97, respectively, with a post-test "F" ratio of 5.69, surpassing the significance threshold. Additionally, the adjusted post-test averages for the Game Specific Skill Practices group and control group were 15.49 and 13.76 respectively for balance. The adjusted post-test "F" ratio of 14.10 exceeded the critical value of 4.21 for significance at the 0.05 confidence level.

For a better understanding of the result, the pre-test, post-test and adjusted post-test mean for Sports competition anxiety were presented below through a graphical chart in figure-II.

Figure II



5. Discussion

The study's finding shows that, when compared to the control group, the experimental group Game Specific Skill Practices had significantly improved on the selected variables such as hand-eye coordination and balance. The experimental groups show significant improvement on the selected dependent variables such as hand-eye coordination and balance at all levels by analysing pre, post and adjusted post-tests by using the ANCOVA test. Dogra and Kumar (2011) found that a 12-week specific exercise training regime significantly improved balance ability among selected Tripura cricketers. Shivaji and Jeyavelmurugan (2013) observed better improvement in psychomotor variables among male cricket players who underwent a Visual Skill Fitness Training Programme compared to a control group. Ceylan and Saygin's (2015) study involving 42 volunteer students revealed significant enhancements in coinciding anticipation timing, reaction time, and hand-eye coordination after proprioceptive training. Additionally, Dogra (2015) determined that a 12-week tailored conditioning program effectively enhanced various motor fitness aspects in Tripura cricketers. These studies collectively highlight the positive impact of specific training regimes on crucial skills and fitness components in cricket players. Sharma and Singh (2018) examined the impact of 8 weeks of coordination training on the visual pursuit of young cricket players aged 12-15 years. The study involved 16 male participants from the LNIPE cricket nursery in Gwalior. Statistical analysis showed a significant improvement in visual pursuit, specifically in the lateral visual tracking (LVT) aspect ($p < 0.05$). This suggests that the 8-week coordination training was effective in enhancing the visual pursuit skills of the young cricket players.

6. Conclusion

It was concluded that eight weeks of Game Specific Skill Practices helped improve the hand-eye coordination and balance of club cricket players. ANCOVA analysis revealed significant improvements in both hand-eye coordination and balance among the experimental group when compared to the control group. The study also revealed that Game Specific Skill Practices have more impact on hand-eye coordination than balance. This study reveals that specific skill practices can be implemented to cricket players in order to improve their cricketing skills and also their psycho-motor abilities of the players. These findings may have implications for the psycho-motor development of the players in different levels of cricket as well as can be implemented in other sports to enhance the performance of the players.

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