VISUAL SKILLS AND ITS IMPACT ON SKILL RELATED PERFORMANCE AMONG VOLLEYBALL PLAYERS

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ABSTRACT

The purpose of this study was to Visual Skills and Its Impact on skill related performance among Volleyball players. To achieve this purpose, twenty four male Volleyball players were selected from various departments of Manonmaniam Sundaranar University, Tirunelveli, and their age ranged between from 20-25 years. The selected subjects were divided in to two groups of 12 each. Group I underwent visual skill training programme for six weeks with three alternative days per week and Group II acted as control. The Pre training and Post training score of the volleyball players and they were tested at 0.05 level of significance. The result of the study indicates that Visual Skill training group had a significant improvement when compare to control group.

Key Words*: Crucifix ball drop, Hand-eye Coordination, Visual Skills, Volleyball.*

INTRODUCTION

Vision can accepted as a critical source of information for the planning and the executing of motor skills. In recent years, there has been a growing acceptance that perceptual skills precedes and determines skillful actions in sport and other contexts (Harris & Jenkin, 1998; [1] Williams, 1999) [2]. In particular, the visual system plays a crucial role in guiding the player's search for essential information underlying skillful behaviour. Visual search strategies refer to the way that the eyes move around the field in an attempt to direct visual attention towards relevant sources of information. According to Zelinsky et.al (1997) [4] eye movement registration systems only provide information about the orientation of the fovea and, consequently, visual fixation may not always be indicative of information extraction. Many circumstances require the effective integration of information from the fovea. Para-fovea and periphery (Williams & David's, 1998) [3].

A sportsman's or- women's extraordinary performance depends on successfully using all of his or her available visual information. Present years there has been a growing acceptance that perceptual skill precedes and determined skillful actions in sport (Williams et al., 1999)[2]. The visual system plays a crucial role in guiding the player's search for essential information underlying skillful behavior. When discussing visual search strategies, it is normally referred to as the way the eyes move around a display in an attempt to direct visual attention towards the relevant sources of information.

Visual performance in sport can be seen as an interaction between two visual systems. The visual system as a computer analogy of information gathering and processing by dividing the "analogy" into the two visual systems, namely the hardware and the software visual systems. The hardware visual system (skills) can be seen as the physical differences in the mechanical and the optometric properties of a person's visual system and the software system (skills) can be seen as the cognitive differences in the analysis, selection, coding and general handing of the visual information during training and or competition. The hardware system consists of six optometric skills, being static and dynamic visual acuity, depth perception, accommodation, fusion, color vision, and contrast sensitivity (A Bernethy, 1987) [5].

Visualization also referred to as mental rehearsal can be defined as the ability to picture in the mind's eye an object, situation, or performance and can be very valuable for cricket and soccer players (Wilson & Falkel, 2004) [6]. When the player trains, he most probably works on his aerobic capacity, endurance, strength, muscle tone and/or

flexibility. But, truth holds that he also needs to train his eyes. The stamina, flexibility and fine- tuning of the visual system can sometimes provide the split second timing the player needs to truly excel in his specific sport (being it cricket or soccer). Most players train every muscle in the body except the eye muscles (Helsen and Starkes 1999) [7].

STATEMENT OF THE PROBLEM

The purpose of the study was to determine the role and the impact of visual skills and its impact on skills performance of Volleyball players.

METHODOLOGY

To achieve this purpose, twenty four (12 + 12) male Volleyball players were selected from various departments of Manonmaniam Sundaranar University, Tirunelveli, and their age ranged between from 20-25 years. The selected subjects were divided in to two groups of 12 each. Group I underwent visual skill training programme for six weeks with three alternative days per week and Group II acted as control. Crucifix ball drop and Hand-eye Coordination were selected as independent variables for this study. Data were collected before and after the training schedule. The collected data were statistically analysed by using dependent 't' test at 0.05 level of confidence to find the significant difference. To find out the significant difference on adjusted post test among the groups, analysis of co-variance (ANCOVA) would used. In all case, the statistical significance would set as.05 level of confidence.

ANALYSIS OF DATA

1. Crucifix ball drop

The analysis of dependent 't' test on the data obtained for crucifix ball drop of the pre-test and post-test means of visual skill training group have been analyzed and presented in table I.

TABLE - I
SUMMARY OF MEAN AND DEPENDENT 't'-TEST FOR THE PRE AND POST TESTS ON CRUCIFIX BALL DROP OF VISUAL SKILL TRAINING GROUP AND CONTROL GROUP

Tests		PRE TEST	POST TEST	't'-value
Visual skill training group	Mean	4.67	7	10.38*
	SD	1.15	1.40	
Control group	Mean	3.42	3.08	1.30*
	SD	0.51	0.79	

*Significant at .05 level. The table value required for 0.05 level of significance with df 11 is 2.20.

The table II shows that the pre-test mean value of visual skill training group and control group are 4.67 and 3.42 respectively and the post test means are 7.00 and 3.08 respectively. The obtained dependent t-ratio values between the pre and post test means of visual skill training and control groups are 10.38 and 1.30 respectively. The table value required for significant difference with df 11 at 0.05 level is 2.20. Since, the obtained 't' ratio value of visual skill training group are greater than the table value, it is understood that visual skill training group had significantly improved the crucifix ball drop. However, the control group has not improved significantly. The 'obtained t' value is lesser than the table value, as they were not subjected to any specific training.

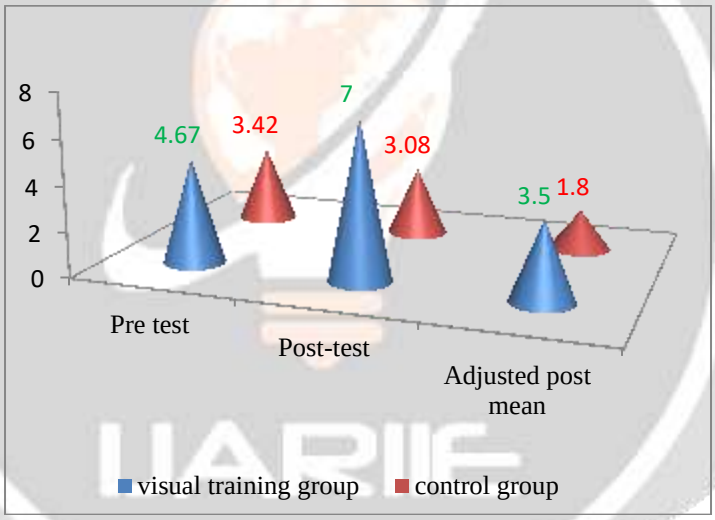
The analysis of covariance on crucifix ball drop of visual skill training and control groups have been analyzed and presented in Table II.

TABLE II
ANALYSIS OF COVARIANCE ON CRUCIFIX BALL DROP OF VISUAL SKILL TRAINING GROUP AND CONTROL GROUP

Adjusted Post Test Means		Sources of Variance	Sum of Square	Df	Means Square	F-ratio
Visual Skill Training Group	Control Group					
6.62	3.46	Between	39.18	1	39.18	65.59*
		With in	12.55	21	0.60	

*Significant at .05 level. The table value required for significance at 0.05 level with df 1 and 21 is 4.32.

Table II shows that the adjusted post test means of visual skill training and control groups are 6.62 and 3.46 respectively. The obtained F-ratio value is 65.59, which is greater than the table value 4.32 with df 1 and 21 required for significance at 0.05 level. Since the value of F-ratio is greater than the table value, it indicates that there is significant difference among the adjusted post-test means of visual skill training and control groups.



Alternate Hand Wall Toss Test

The analysis of dependent 't' test on the data obtained for Hand-eye coordination of the pre-test and post-test means of visual skill training group have been analyzed and presented in table III.

TABLE III
SUMMARY OF MEAN AND DEPENDENT 't'-TEST FOR THE PRE AND POST TESTS ON HAND-EYE COORDINATION OF VISUAL SKILL TRAINING GROUP AND CONTROL GROUP

Tests		PRE TEST	POST TEST	't'-value
Visual skill training group	Mean	22.58	27	8.59*
	SD	1.16	1.54	
Control group	Mean	17.58	17.42	0.28*
	SD	1.51	2.64	

*Significant at .05 level. The table value required for 0.05 level of significance with df 11 is 2.20.

The table III shows that the pre-test mean value of visual skill Training group and control group are 22.58 and 17.58 respectively and the posttest means are 27 and 17.42 respectively. The obtained dependent t-ratio values between the pre and post test means of visual skill Training group and control groups are 8.59 and 0.28 respectively. The table value required for significant difference with df 11 at 0.05 level is 2.20. Since, the obtained 't' ratio value of visual skill Training group are greater than the table value, it is understood that visual skill training group had significantly improved the Hand-eye coordination . However, the control group has not improved significantly. The 'obtained t' value is lesser than the table value, as they were not subjected to any specific training.

The analysis of covariance on Hand-eye coordination of visual skill training group and control group have been analyzed and presented in Table-IV.

TABLE IV
ANALYSIS OF COVARIANCE ON HAND-EYE COORDINATION OFVISUAL SKILL TRAINING GROUP AND CONTROL GROUP

Adjusted Post Test Means		Sources of Variance	Sum of Square	Df	Means Square	F-ratio
Visual Skill Training Group	Control Group					
22.05	19.37	Between	40.64	1	40.64	10.85
		With in	78.66	1	3.75	

*Significant at 0.05 level confidence. The table value required for significance at 0.05 level with df 1 and 21 is 4.32.

Table IV shows that the adjusted post test means of visual skill training and control groups are 25.05 and 19.37 respectively. The obtained F-ratio value is 10.85, which is greater than the table value 4.32 with df 1 and 21 required for significance at 0.05 level. Since the value of F-ratio is greater than the table value, it indicates that there is significant difference among the adjusted post-test means of visual skill training and control group.

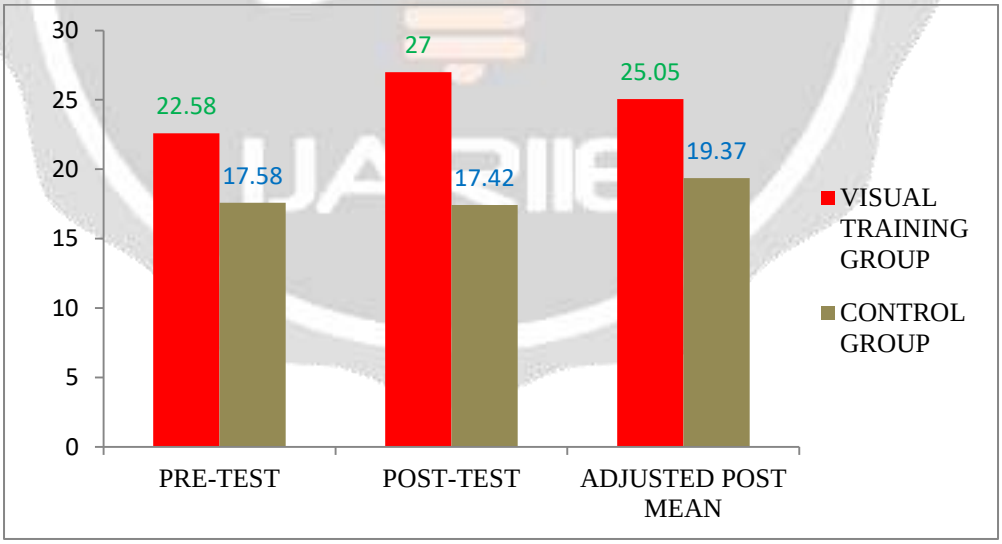


FIGURE II: MEAN V ALUES OF EXPERIMENTAL AND C ONTROL GROUPS ON HAND-EYE COORDINATION

DISCUSSION ON FINDINGS

The results of the study indicate that Volleyball skills were improved due to visual skills. the result of the

study also supported by P.E. Kruger , J. Campher and C.E. Smit (2009) [8] determine the role and the impact of a visual skills training programme on visual skill tests and potentially, on the performance of cricket players, the result indicate that there was an increase ball handling skills, co-ordination, visual awareness, eye tracking skills, accuracy, peripheral awareness, pro-action – reaction skills and visual concentration due to the effects of Visual skills training, also the result indicate that increase in the players' visual fields.

CONCLUSION

The result of study indicates that there was significant improvement on crucifix ball drop and Hand-eye coordination due to the effect of visual skill training among Volleyball players when compared to control group.

The result of study also indicates that there was significant difference among Volleyball players towards improving the selected skill performance variables such as crucifix ball drop and Hand-eye coordination than control group.

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