

Comparison of Selected Psycho-Physical Parameters of Players of Certain Sports

Anjali Pal^a, Swadesh Shrivastava^b

^aPhDScholar, CSJM University, Kanpur, India

^bProfessor, Har Sahai Degree College, Kanpur, India

Abstract

Aim-:The purpose of the study was to compare the psycho-physiological parameters viz Balance and Co-ordination of Basketball, Soccer and Hockey women players.**Material and Methods-:**15 female players of each of Basketball, Soccer and Hockey were selected as subjects. The subjects selected for the study were from those who represented inter-collegiate tournaments and inter- university trails of CSJM University, Kanpur. The age of the subjects was ranging from 17-25 years. The researcher has also delimited the study to following selected variables i.e. Dynamic Balance, Eye- Foot Co-ordination and Eye-Hand Co-ordination.**Hypothesis:**It was hypothesized that there might be insignificant differences in Balance and Co-ordination among the Basketball, Soccer and Hockey women's players. **Statistical Process:**One way Analysis of variance technique was employed to determine the difference among the payers of selected games for each variable independently was applied at 0.05 level of significance. **Results-:** On the basis of the finding of the study the following conclusion were drawn that there was a significant difference in Dynamic Balance and Eye- Hand Coordination among the Soccer, Hockey and Basketball players.

Keywords:Balance, Co-ordination and Games

Introduction

Games and sports hold as a prominent place in modern life, millions of people participate in sporting activities. Watch and read about them and spend money and time on sports related activities and equipments. The impact of sports in modern society has made it clear that sports are a very legitimate field of academic study.

Many people participate in sports and games for fun, happiness, pleasure for health and fitness. Increased participation in sports has resulted in completion which has become an important element of modern life. Competition provides the means by which one can show one's worth by competing successfully, for top level performance. It is very important to spot, select and nurture a budding sportsman as it is recognized by all that athletes must possess some inherent qualities, which can be developed by means of systematized and scientific training.

One's ability to balance is or her body in static or dynamic positions depends upon the function of the mechanism in the semi-circular canal of the year; visual perception; the kinesthetic sensation in the muscles, tendons and joints; and the ability to co-ordinate the above mentioned three sources of stimuli. Therefore, the testing of balance depends on the measurement of body response of the above maintained stimuli and co-ordination. Balance is an important human ability used in over every day activities like walking and standing as well as in majority of the games and sports and dancing.

“Co-ordination is the ability to integrate muscles movements into an efficient pattern of movement.” Co-ordination makes the difference between good performance and poor performance. Efficiency of skill patters depends upon the interrelation of speed, balance and muscle movements into as well co-ordinate pattern.

The neuro-muscular co-ordination of the individual which includes his ability to learn new skilled finally achieve competency in physical activities as essential to all phases of physical education. Activities for developing such co-ordination, therefore, should be considered.

Purpose of the Study

The purpose of the study was to compare the selected psycho-physiological parameters of Basketball, Soccer and Hockey women’s players.

Methods

15 Women player’s of each of Basketball, Soccer and Hockey players were selected as subjects. The subjects selected for the study were those who represented inter-collegiate tournaments and inter- university trails of CSJM University, Kanpur. The age of the subjects was ranging from 17-25 years. Random Sampling method was used for the selection of players.

The sources of data were from Inter- collegiate Basketball, Soccer and Hockey women’s players studies in different colleges under in CSJM University who participated in inter- collegiate tournaments as well as who appeared in the selection of trails of CSJM University, Kanpur for respective team trail.

Selection of variables

In Basketball, Soccer and Hockey it is out most important that the players required well balance in dynamic condition, fine Neuro-muscular co-ordination and quick reaction time to execute their excellent skill performance during game. That is why the researcher selected the following variables i.e. Dynamic Balance, Eye- Foot Co-ordination and Eye- Hand Co-ordination.

Selection of Tests and Criterion Measures

For collecting data the researcher has taken the following tests. Dynamic Balance was measured by using modified Base Test of Dynamic Balance and the score was recorded in number of points. Co-ordination was measured by using Eye- Hand and Eye-Foot co-ordination tests and the scores were recorded in seconds.

Balance Ability Test

Purpose: To measure the balance ability of the subject.

Procedure: A balancing beam of standard size was kept on floor, 1.5 meter away from the starting line as shown in figure 1 the subject was asked to stand behind the starting line with 1 kg medicine ball in his strong hand fully stretched forward and other hand holding the opposite ear lobe. On clapping, the subject had to move over the balancing beam towards the 2 kg medicine ball which was kept at the other end of the beam and push down the medicine ball with any of the foot without losing the balance. Each subject was given only one chance.

Scoring: the time taken in seconds to complete the course was taken as the score. At the same time the subjects who failed to complete the task not given further trials and hence no score was awarded to them.

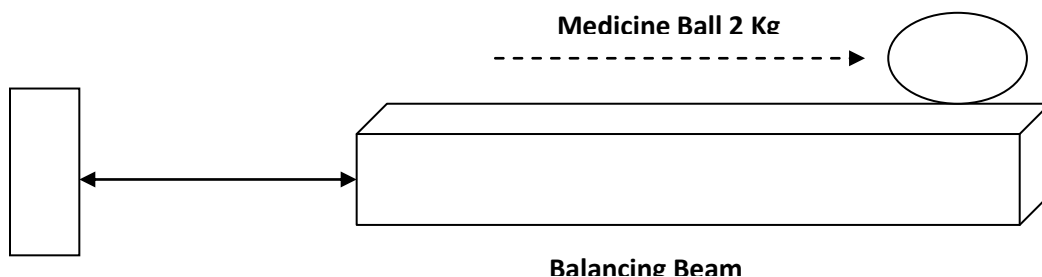


Figure-1 Balance Ability Test

Coordinative Abilities :

(i) Eye hand Co-ordination Test (Ball transfer) :

Description : After giving the demonstration the subject was asked to stand in the middle of two boxes lying at a distance of 15 feet from each other. Five ordinary playground balls of 10” diameter were put in the box lying on the left hand side of the subject. The tester gives the command ready, “Go”. At the word go, the tester switched on the stop watch, while the subject run to the box on his left, took out one ball, run to the right box, put the ball in the box, run back to the left box to take another ball for putting in the right box and repeated the process till the last ball was put in the right box. As soon as the subject put the last ball in the right box, the tester stopped the stopwatch.**Scoring :** The subject was given two trials after a slow practice trial. The best timing was the score of the subject.

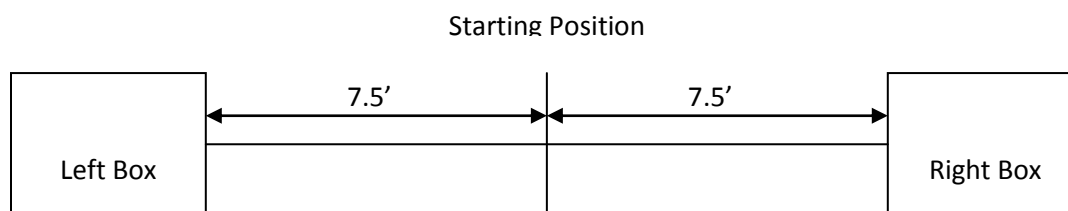


Illustration of the position of boxes and subject’s starting sport in

(ii) Eye Foot Co-ordination :

Description : The tester gave a demonstration to the subjects, then subjects were asked to hop according to the printed foot prints as quickly as possible. The subject was allowed two trials after slow practice trial.**Scoring :** Total time elapsed from starting to the completion of the test, gave the score of the test. Best of two test trials were considered for the final score.

Collection of Data

On the first day 15 players from Basketball were assembled for the test. The data pertaining were recollected from the following variable. Balance and Co-ordination on basketballwomen’s players. On the second and the third day the same test were conducted on Soccer and Hockey players respectively. The procedure was same in the first day.

It was hypothesized that there might be insignificant differences in selected psychophysiological parameters among the Basketball, Soccer and Hockey women’s players.

Statistical treatment:

One way Analysis of variance technique was employed to determine the difference among the players of selected games for each variable independently.

Results and Findings

Table 1

ANOVA for the data on Dynamic Balance among the players of Soccer, Hockey and Basketball

Source of variation	d.f	SS	MSS	F-RATIO
Between the groups	2	1662.50	831	3.43*
Within the groups	33	7487.50	242.04	
Total	35			

*Significant at 0.05 level
 tab. F0.05 (2, 33) = 3.2

The findings of table -1 reveal that Dynamic Balance differs significantly among the players Soccer, Basketball and Hockey because the calculated F-Value of 3.43 is higher than that of tabulated F-Value of 3.22 at 0.05 levels. Since the F-ratio is observed to be significant, hence least significant Difference (LSD) post Hoc Test was employed to determine the pared mean difference among the groups.

Table 2

Paired Mean Difference of Dynamic Balance among the players of Soccer, Hockey and Basketball.

Mean			Mean Difference	Critical Difference
Soccer	Basketball	Hockey		
11.250	16.250		5	7.31
11.250		5	6.25	7.31
	16.250	5	11.25*	7.31

*significant at 0.05 level

The findings of table 2 reveal that the mean of dynamic Balance Significantly differs in between Soccer and Basketball players (MD=5) and Soccer and Hockey players (MD = 6.25) as the mean insignificant difference values are lower than the critical difference value of 7.31 at 0.05 level of confidence. It is also learnt from the above table that the mean difference value of Basketball and Hockey players (MD = 11.25) is higher than the critical difference value of 11.31, hence there is significant difference in Dynamic Balance in Basketball and Hockey players.

Table 3

ANOVA for the data on Eye-Hand Co-ordination among the players of Soccer, Basketball and Hockey

Source of variation	D.F	SS	MSS	F-Ratio
Between the groups	2	116.22	58.11	

Within the groups	33	348.66	10.57	5.50*
Total	35			

Significant at 0.05 level
 tab. $F_{0.05}(2, 33) = 3.22$

The findings of table 3 reveal that Eye-Hand Co-ordination differ significant among the players of Soccer, Basketball and Hockey because, the calculated F-value of 5.50 is higher than that of selected F-value of 3.22 at 0.05 level. Since the F-ratio is observed to be significant, hence least significant difference among the groups. The ordered of means is shown in table 4.

Table 4
Paried Mean Difference of Eye-Hand Co-ordination among the players of Soccer, Hockey and Basketball

Mean			Mean Difference	Critical Difference
Soccer	Basketball	Hockey		
2.833	4.33		1.5*	1.35
2.833		1.50	1.33	1.35
	4.33	1.50	2.38*	1.35

*Significant at 0.05 level.

The findings of table 4 reveal that the mean of Eye-Hand Co-ordination significantly differ in between soccer and Basketball players (MD = 1.5), Basketball and Hockey players (MD = 2.38) as the mean difference values are higher than the critical difference value of 1.35 at 0.05 level of confidence. The table also depicts that the mean difference value of Soccer and Hockey players (ND = 1.33) is less than the critical difference value of (1.35), hence there is no significant difference in Eye-Hand Co-ordination in Handball and Basketball players.

Table 5
ANOVA for the data on Eye-Foot Co-ordination among the players of Soccer, Basketball and Hockey

Source of variation	D.F	SS	MSS	F-ratio
Between the groups	2	6.22	3.11	0.719
Within the groups	33	142.75	4.33	
Total	35			

*Significant at 0.05 level

Tab. $F_{0.05}(2,33)=3.22$

The findings of table -5 reveal that Eye –Foot Co-ordination does not differ significantly among the players of Soccer, Hockey and Basketball because, the calculated F-value of 0.719 is less than that of tabulated F-value of 3.22at 0.05 level.

Since the F-ratio is observed to be in insignificant, hence LSD post hoc test was not employed.

Discussion of Hypothesis

In the beginning of the study it was hypothesized that there might be insignificant differences in selected psycho-physiological parameters among the Basketball, Soccer and Hockey women's players were partially accepted and partially rejected.

Conclusion

Within the limitation of the present study and on the basis of findings the following conclusions are drawn:-

- 1) The findings of the study revealed that there was significant difference in Dynamic Balance and Eye- Hand Co- ordination among the Soccer, Hockey and Basketball players.
- 2) There was no significant mean difference among the Soccer, Hockey and Basketball players in Eye- Foot Co- ordination.
- 3) The findings also revealed that Soccer players had shown significantly superior performance than the Basketball and Hockey players in Dynamic Balance.
- 4) The findings of the study also revealed at the Hockey players had shown superior Eye-Hand Co- ordination than Soccer and Basketball players.

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