

**COORDINATIVE ABILITIES OF FEMALE BASEBALL AND SOFTBALL
PLAYERS: A COMPARATIVE STUDY**

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Abstract:

The purpose of the study was to compare the selected **coordinative Abilities between baseball and softball female players**. For this purpose, 30 female baseball and softball players of 19-25 years of age group were selected. All the subjects, after having been informed about the objectives of the study, volunteered to participate in this study. They were further divided into two groups 15 Baseball players and 15 Softball players. Data was collected by administering selected coordinative abilities test which were Reaction ability, Balance ability, and Differential ability. To find the significant difference t-test was used at the significant level of 0.05. Results of this study revealed that there was a no significant difference between Reaction ability ($t=-1.694$), Balance ability ($t=-2.098$), and Differential ability ($t=-1.388$).

Keywords: Baseball, Softball, Reaction ability, Balance ability & Differential Ability.

Introduction:

Baseball is a popular sport in European countries. Baseball and softball are almost similar sports as some rules of softball differ from baseball in several categories like its pitching style, its base to base running difference, diamond size, slugger size, ball size etc. In both sports physical fitness and coordinative abilities are required. Most research in the field of baseball and softball has been done to investigate the relationship to the properties of pitching, throwing and hitting the ball. Little research has been completed to determine the difference of coordinative abilities of baseball and softball players. These sports by its nature are very enjoyable, challenging and require certain amount of skill, physical fitness and coordination abilities.

Coordinative abilities have an important criterion for better performance. These abilities completely depend on neuromuscular coordination of a person. Reaction is a purposeful response of skeletal muscles. Audio visual reaction time is speed, with which a person can respond to a situation accordingly. Balance ability helps a sportsperson to keep the total body in a certain position. Balance plays a prominent role during batting in both sports. Orientation ability permits a sportsperson to determine the position and movement of his own body and his/her opponent's positions.

Methodology:

For this study 15 Baseball and 15 Softball female players were selected from different colleges of Amritsar under the affiliation of Guru Nanak Dev University.

Variables:

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Following coordinative abilities were selected as variables for this study:

- Reaction Ability
- Balance Ability
- Differentiation ability

Procedure:

- To test the Reaction ability “**Ball Reaction Exercise Test**” was used.

Description: Two wooden planks of four meters each were kept in a lined by a supporting stand having a height of 1.20 mtr, so that it could enable volleyball to roll freely from a height of 1.20 m. The lower ends of the planks were graduated in centimetres. Volleyball was hold by the tester at the top of the planks. The subject was asked to stand behind the starting line, facing opposite to the planks on clapping. The subject took a turn and run towards the planks which was dropped on the ball width both the hands which was dropped on the signal each subject was given a practice trial before actual commencement of the test.

Instructions: The ball should be stopped with both hands. The ball should not be pushed upward while stopping.

Scoring: The soccer was the distance measured in cms. from the top of the planks to a point where the subject stopped the ball, only two trials were given and the best one was recorded as the score of the subject.

- To test the Balance ability “Long nose test” was used.

Description: A balancing beam of standard size was kept and the floor, one and half mete away from the starting line, the subject was asked to stand behind the starting line with 1 kg. medicine ball on his strong hand fully stretched forward and the other band holding the opposite ear lobe on clapping the subject moved over the balancing beam toward the 2 Kg. Medicine Ball which was kept at the other end of the beam pushed down the medicine ball with any of the leg and then come back of the starting line without losing the balance. Each subject was given only one chance.

Instructions: The aim with which the ball is carried should be kept straight. The medicine ball kept on the balancing beam should be role down with any foot.

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 were not given further trials and no score was awarded.

- To Test the Differential ability (**Backward Medicine Ball Throw Test**) was used.

Description: A Gymnastic mat was kept 2 M. away from the starting line as shown in figure-4. A circle of 40 cm. radius was drawn in the middle of the mat and a medicine ball of 2 kgs.

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was kept at the centre of the circle. The subjects were asked to stand behind the standing line facing the opposite direction. They were asked to throw five medicine balls (1 kgs) over the head to put the 2 Kg. balls kept on the mat, one after another by using both the hands. One practice trial was given to all the subjects.

Instructions: Only overhead throw was permitted, the students were not allowed to look back.

Scoring: Medicine ball touching the mat-1 point, medicine ball touching the circle line 2 points, medicine ball touching inside the circle-3 points, medicine ball touching the 2 kg. medicine ball kept at the centre of the circle-4 points. Points were decided considering the first pitch of the ball. The score of the individuals was the total points scored in all the five throws.

Results and Findings:

The results pertaining to significant difference, if any, between baseball and softball female players were assessed using the t-test and results are presented in three tables.

Table No-1

Table Showing the mean values, standard deviation and t value of baseball and softball female players in relation to their Reaction Ability

Sr.No.	Subjects	N	Mean	Standard deviation	t value
1	Baseball	15	1.691	0.238	-1.694
2	Softball	15	1.938	0.512	

* Significant at $t_{.05}(28)=2.052$

Table 1 clearly indicates that there is no significant difference between baseball & softball female players in relation to their Reaction Ability at 0.05 level of significance.

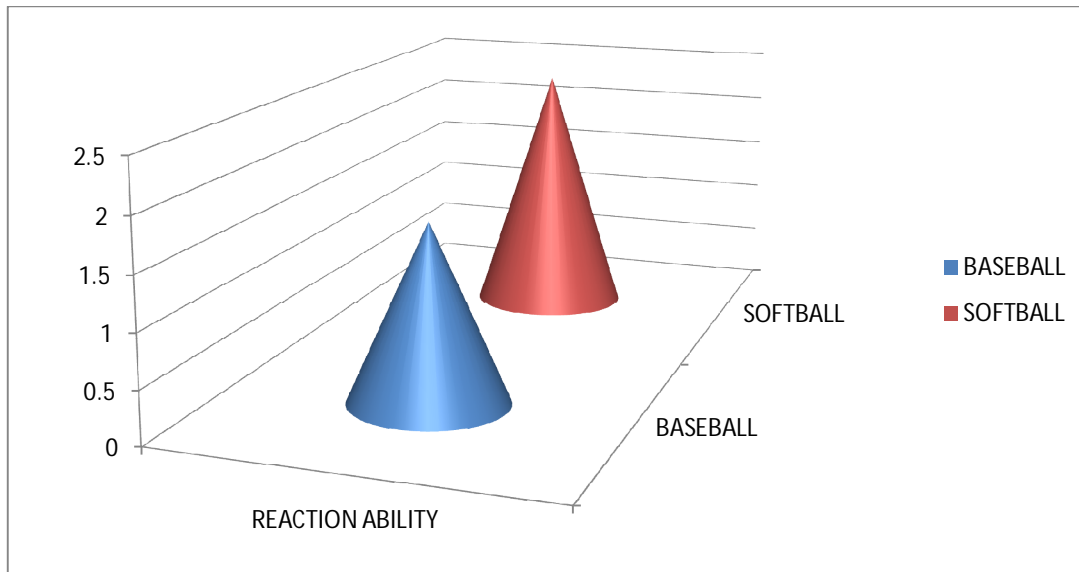


Fig. 1: Graphical representation of reaction ability between Baseball and Softball female players

Table No-2

Table Showing the mean values, standard deviation and t value of baseball and softball female players in relation to their Balance Ability

Sr.No.	Subjects	N	Mean	Standard deviation	t value
1	Baseball	15	5.712	0.644	-2.098
2	Softball	15	6.223	0.698	

* Significant at $t_{.05}(28) = 2.052$

Table 2 clearly indicates that there is no significant difference between baseball and Softball female players in relation to their balance Ability at 0.05 level of significance

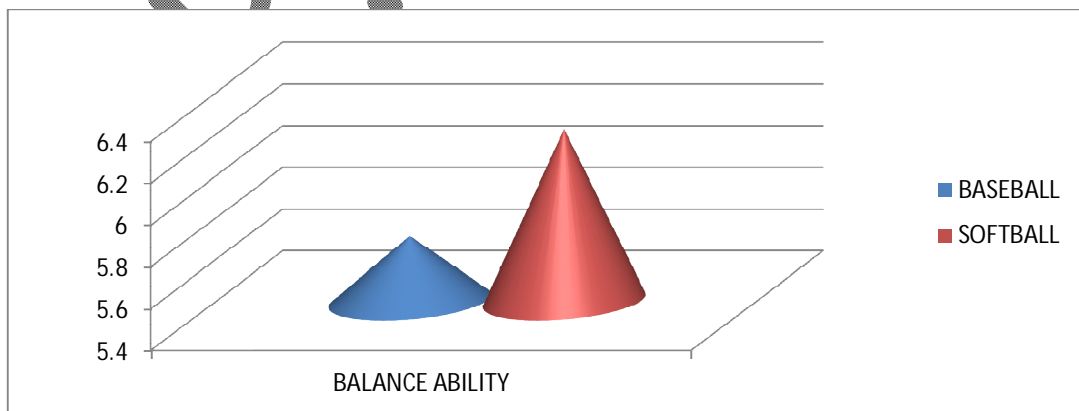


Fig. 2: Graphical representation of Balance ability between Baseball and Softball female players.

Table No-3
Table Showing the mean values, standard deviation and t value of baseball and softball female players in relation to their Differentiation ability

Sr.No.	Subjects	N	Mean	Standard deviation	t value
1	Baseball	15	12.533	3.777	1.730
2	Softball	15	14.133	2.384	

* Significant at $t_{.05}(28) = 2.052$

Table 3 clearly indicates that there is no significant Differentiation between baseball and softball female players in relation to their Differential Ability at 0.05 level of significance.

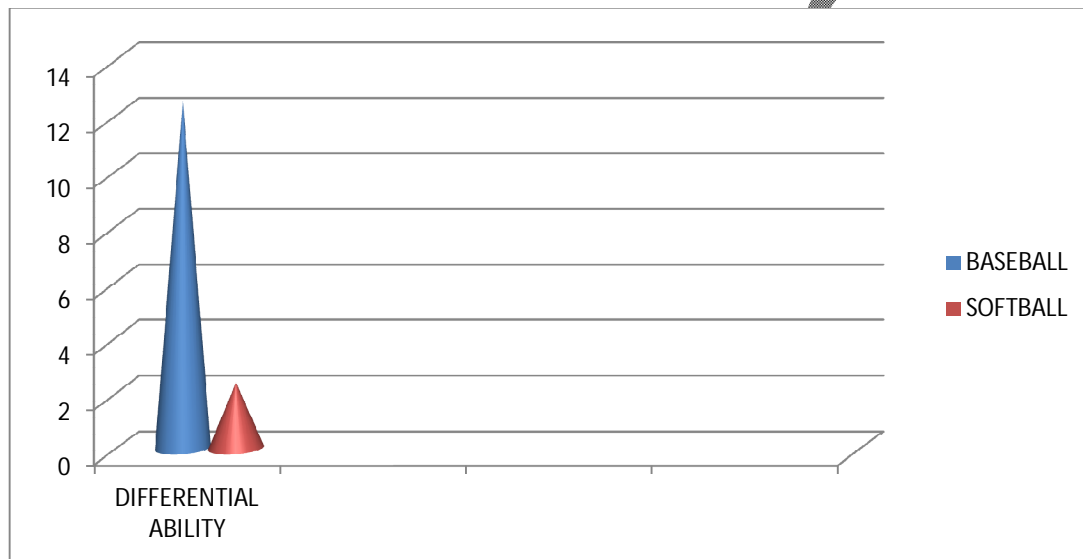


Fig. 3 : Graphical representation of Differential ability between Baseball and Softball female players.

Discussions and Findings:

It was concluded from the above finding that the insignificant difference was found in Reaction ability (Ball Reaction Exercise Test), Balance ability (Long Nose Test) and Differential ability (Backward Medicine Ball Throw Test) between Baseball and Softball female players.

References:

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