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## Balance ability possessed by handball players pertaining to different playing positions

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### Abstract

The study was undertaken with an objective to compare Balance ability pertaining to different playing positions of handball. Seventy handball players were selected pertaining to the playing positions of handball. All the selected handball players were from different Universities of it country who participated in all India Intervarsity handball championship. All the players were in between the age of sixteen to twenty four years. The study was conducted by taking only a single variable, Balance ability. Data for independent variable (Balance ability) was collected by Long nose test and the score was recorded in seconds. To compare Balance ability pertaining to players of different playing positions of handball, one way analysis of variance was used at .05 level of significance. To test the homogeneity of variance, levene statistics was used. To compare paired means Sidak Post-Hoc test was used. Results showed that F- value of 9.49 regarding the comparison of balance ability among the different playing sports (playing positions of handball players). This value was found significant, this proves that significant difference exist among the group of different playing positions in case of balance ability.

**Keywords:** Balance ability, handball players, pertaining, playing positions

### 1. Introduction

Balance ability is the most important traits for any sportsmen. In handball also it has a great significance. Lee, B. (2010) described balance ability as a foundation of all movements. All the movements originate from the balance ability. In any sports, players loose centre of gravity try to regain it to maintain the balance. During play this is performed several times. Singh, H. (1991) justified that balance ability is important and necessary requirement to perform all type of movements. This ability can be of two types i.e. static and dynamic- both are required to excel in the field of games and sports since all the actions related to skills are performed in both the conditions i.e. static and dynamic. In the game of handball this ability has a significant contribution. In this game, players play on different playing positions. At each playing position, different types of moves are performed. All the moves originate from this ability.

### 2. Objective of the study

The study was undertaken with an objective to compare Balance ability pertaining to different playing positions of handball.

### 3. Methodology

#### 3.1 Subjects

Seventy handball players were selected pertaining to the playing positions of handball. All the selected handball players were from different Universities of the country who participated in all India Intervarsity handball championship. All the players were in between the age of sixteen to twenty four years.

#### 3.2 Variables

The study was conducted by taking only a single variable, Balance ability. This variable was considered an independent variable in this study.

#### 3.3 Playing Positions

In this study playing positions were considered a dependent variable.  
Following seven playing positions were selected for the purpose of study:

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- a) Centre player
- b) Goal keeper
- c) Left shooter
- d) Left winger
- e) Pivot player
- f) Right shooter
- g) Right winger

**3.4 Collection of data**

Data for independent variable (Balance ability) were collected by Long nose test and the score was recorded in seconds.

**3.5 Statistical analysis**

To compare Balance ability pertaining to different playing positions of handball, one way analysis of variance was used at .05 level of significance. To test the homogeneity of variance, levene statistics was used. To compare paired means Sidak Post-Hoc test was used.

**3.6 Finding**

**Table 1:** Test of Homogeneity of Variances

Balance Ability			
Levene Statistic	df1	df2	Sig.
5.857	6	63	.000

Levene statistic is a test to test the homogeneity of variance. In the study levene statistics of 5.857 (table-1) was found and this value is significant at .05 level. This shows that homogeneity of variance was not found among the groups (Playing positions). Since this value was found significant, Brown-Forsythe & Welch statistics was applied.

**Table 2:** shows that Welch statistics and Brown-Forsythe was found significant at .05 level.

Robust Tests of Equality of Means				
Balance Ability				
	Statistic <sup>a</sup>	df1	df2	Sig.
Welch	12.556	6	26.260	.000
Brown-Forsythe	9.498	6	40.826	.000
a. Asymptotically F distributed.				

**Table 3:** Descriptive statistics of Handball Players in Different Playing Positions

Balance Ability						
Playing Positions	N	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Centre players	10	10.34	.45	.14	10.02	10.67
Goalkeeper	10	10.23	.33	.10	9.99	10.47
Left Shooter	10	10.43	.51	.16	10.06	10.80
Left Winger	10	10.69	.65	.20	10.22	11.16
Pivot players	10	10.09	.15	.04	9.98	10.20
Right Shooters	10	9.93	.09	.02	9.86	9.99
Right Wingers	10	11.22	.55	.17	10.82	11.61
Total	70	10.42	.57	.06	10.28	10.56

**Table 4:** Analysis of variance for the comparison of Balance ability among Different Playing Positions of Handball Players

Balance Ability					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.998	6	1.833	9.498	.000
Within Groups	12.158	63	.193		
Total	23.155	69			

Table 4 exhibit the F- value of 9.49 regarding the comparison of Balance Ability among the different sports (Playing positions of Handball players). This value was found significant, this proves that significant difference exist among the groups of different playing positions in case of Balance Ability.

Sidak post-hoc test was used for comparing paired means of different playing positions in Balance Ability.

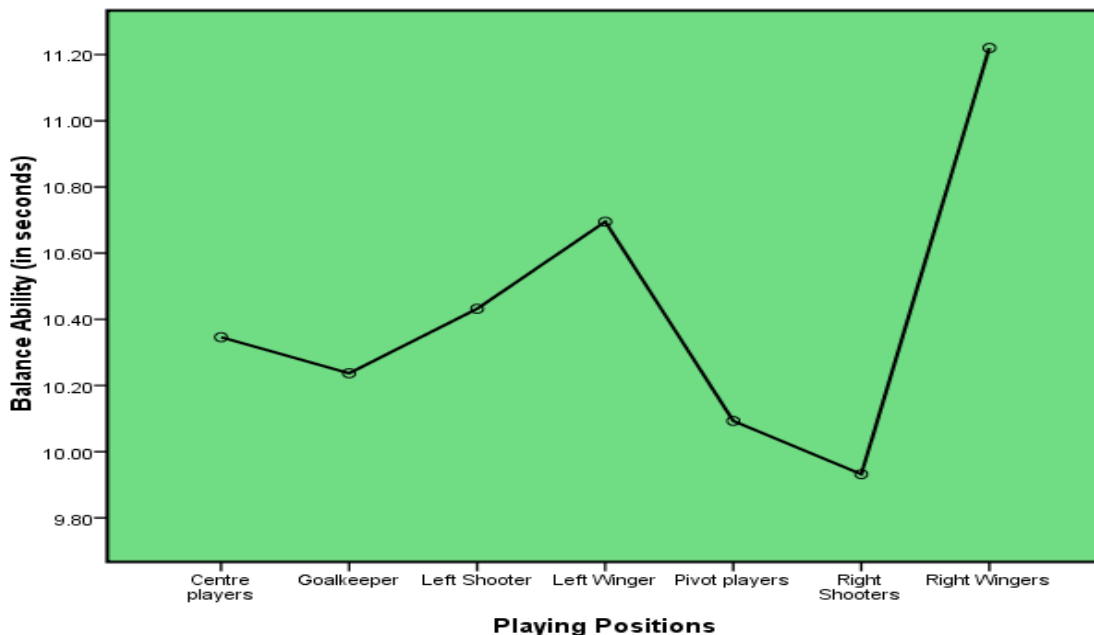
**Table 5:** Sidak Post-Hoc test for the comparison of paired means of Different Playing Positions in Balance ability

(I) Playing Positions	(J) Playing Positions	Mean Difference (I-J)	Standard Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Centre players (CP)	Goalkeeper(GK)	.109	.196	1.000	-.511	.729
	Left Shooter(LS)	-.086	.196	1.000	-.706	.534
	Left Winger(LW)	-.349	.196	.828	-.969	.271
	Pivot players(PP)	.253	.196	.991	-.367	.873
	Right Shooters(RS)	.414	.196	.567	-.206	1.03
	Right Wingers(RW)	-.874*	.196	.001	-1.49	-.253
Goalkeeper (GK)	Left Shooter(LS)	-.195	.196	1.000	-.815	.425
	Left Winger(LW)	-.458	.196	.386	-1.07	.162
	Pivot players(PP)	.144	.196	1.000	-.476	.764
	Right Shooters(RS)	.305	.196	.940	-.315	.925
	Right Wingers(RW)	-.983*	.196	.000	-1.60	-.362
Left Shooter (LS)	Left Winger(LW)	-.263	.196	.987	-.883	.357
	Pivot players(PP)	.339	.196	.860	-.281	.959
	Right Shooters(RS)	.500	.196	.246	-.120	1.12
	Right Wingers(RW)	-.788*	.196	.003	-1.40	-.167
Left Winger (LW)	Pivot players(PP)	.602	.196	.065	-.018	1.22
	Right Shooters(RS)	.763*	.196	.005	.142	1.38
	Right Wingers(RW)	-.525	.196	.183	-1.14	.095
Pivot players (PP)	Right Shooters(RS)	.161	.196	1.000	-.459	.781
	Right Wingers(RW)	-1.127*	.196	.000	-1.74	-.506
Right Shooters (RS)	Right Wingers(RW)	-1.28*	.196	.000	-1.90	-.667

\*. The mean difference is significant at the 0.05 level.

Table- 5 shows the comparison of paired means, the pair of CP and RW (MD=-.87, p=.001); GK and RW (MD=-.98, p=.000); LS and RW (MD=-.78, p=.003); LW and RS (MD=.76, p=.005); PP and RW (MD=-1.12, p=.000) & RS and RW (MD=-1.28, p=.000) showed significant difference. The pair of CP and GK (MD=.10, p=1.00); CP and LS (MD=-.08, p=1.00); CP and LW (MD=-.34, p=.82); CP and

PP (MD=.25, p=.99); CP and RS (MD=.41, p=.56); GK and LS (MD=-.19, p=1.00); GK and LW (MD=-.45, p=.38); GK and PP (MD=.14, p=1.00); GK and RS (MD=-.30, p=.94); LS and LW (MD=-.26, p=.98); LS and PP (MD=.33, p=.86); LS and RS (MD=.50, p=.24); LW and PP (MD=.60, p=.06); LW and RW (MD=-.52, p=.18) & PP and RS (MD=.16, p=1.00) did not show the significant difference.



**Note:** Lower the score better the performance since Balance Ability in measured in seconds and less time indicates better performance.

**Fig 1:** Mean Plot for the comparison of Balance ability among Different Playing Positions of Handball Players

**4. Discussion of findings**

Study was conducted by Kapri, B. C., & Choudhary, R. to compare coordinative abilities of different playing positions of Indian football players. Results showed that significant difference was found among the footballer of different playing positions in relation to reaction ability (F=8.27); orientation ability (F=14.73); differentiation ability (F=12.52); balance ability (F=18.37) and rhythm ability (F=26.08) respectively. Study was conducted by Choudhary, R., & Singh, N. P. To compare coordinative abilities in different weight categories of Judokas. The results of the study conducted that in reaction ability, differentiation ability, rhythm ability & balance ability, significant difference was found between different weight categories of Judokas. On the other hand insignificant difference was found between different weight categories of Judokas in relation to orientation ability. Present study reveal that right shooter possessed the better balance ability in comparison of handball players of all playing positions. Significant difference was found between the centre player, & right winger; goalkeeper & right winger; left shooter & right winger; left winger & right shooter; pivot player & right winger; right shooter & right winger. Present study supports the above mentioned studies, since significant difference was found between the different weight categories of Judokas as well as among the different playing positions of football players in balance ability. This might be due to the reason that at different playing positions as well as in different weight categories, different level of balance ability is required.

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