



# A Comparison of Selected Physical Fitness Variables Among Volleyball, Handball and Kho-Kho Players of Hemchandracharya North Gujarat University, Patan

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## Abstract:

*The purpose of the study was to compare selected physical fitness Variables among Volleyball, Handball and kho-kho Players. This study was conducted on 60 subjects for the comparison of selected physical fitness variables among Volleyball, Handball and kho-kho players from Hemchandracharya North Gujarat University, Patan. The variables selected for the study were physical fitness variables (endurance, leg power, speed). One-way analysis of variance (ANOVA) was used to find out the significant difference among the three groups. The LSD post hoc test was used to find the paired mean significant difference. It was concluded that there was significant difference between Volleyball, Handball and kho-kho players in physical fitness variables endurance, leg power. There was no significant difference in speed among Volleyball, Handball and kho-kho players at 0.05 level of significance.*

## 1. Introduction

Society today is changing fast with influence of scientific researches throughout the world. In each and every field of life there does vigorous competition exist and man has become very calculative and competitive in nature.

Importance of physical fitness is nurtured only when man exhibits his innocence to stand as a complete individual in the society. The society believes that to lead successful life one should attain victories in all his ventures. But success should not be accessed through number of victories, it should be assessed only through pains and problems that you overcome. Fitness and training are the most misused and over used words in English language. Sir Roger Banister defined "physical fitness" as a state of mantle and physical harmony which enables someone to carry on his occupation to the best of his ability with the greatest happiness. Anthropometry constitutes the earliest form of measurement in physical education, as one might surmise. Study of the human physique and its proportions began many centuries ago.

## 2. Objective of the Study

The objective of the study was to Compare selected physical fitness variables among Volleyball, Handball and kho kho players of Hemchandracharya North Gujarat University, Patan.

## 3. Methodology

### 3.1 Selection of subjects

To achieve this purpose of investigation 60 male players each in Handball, Volleyball and kho kho players from Hemchandracharya North Gujarat University, Patan were randomly selected. Following variables were selected for the purpose of the study.

### 3.2 Physical fitness variables

1. Speed
2. Endurance
3. Leg Power

### 3.3 Criterion Measures

1. Speed was measured by 50 mt. dash. The score was recorded to the nearest tenth of a second.
2. Cardio vascular endurance was measured by the 600 mt. run / walk and the score was recorded to the nearest tenth of a second.
3. Leg power was measured by standing Broad jump and scored in meters.

### 3.4 Statistical Techniques

One-way analysis of variance (ANOVA) was used to find out the significant difference among the three groups. The LSD post hoc test was used to find the paired mean significant difference.

**Table 1: The Analysis of Variance on the Means Obtained Form Volleyball, Handball and Kho Kho Players in Physical Fitness Variables Speed**

(Scores in second)

	Mean Values of Players			Source of Variance	Sum of Squares	Df	Mean Squares	F
	Volleyball	Handball	Kho Kho					
				Between	0.92	2	0.46	
Means	6.43	6.20	6.48					1.45
				within	18.05	57	0.32	

Table 'F' ratio at 0.05 level of confidence for 2 and 57 (df) = 3.15

The mean value obtained for speed among Volleyball, Handball and kho kho were subjected to statistical analysis using analysis of variance and the obtained 'F' value 1.45 was less than the required F value 3.15, to be significant at 0.05 level. Hence, it was found that there was no significant difference between Volleyball, Handball and kho kho players in speed.

**Table 2: The analysis of variance on the means obtained form volleyball, handball and kho kho players in physical fitness variables endurance**

(Scores in minutes)

	Mean Values of Players			Source of Variance	Sum of Squares	Df	Mean Squares	F
	Volleyball	Handball	Kho Kho					
				Between	0.91	2	0.45	
means	1.54	1.59	1.30					11.59*
				within	2.24	57	0.04	

Table 'F' ratio at 0.05 level of confidence for 2 and 57 (df) = 3.15

•Significant at 0.05 level

Since the obtained 'F' value was greater than the required 'F' value to be significant LSD post hoc analysis was made through computation of LSD Confidence Interval, which is presented in Table 3.

**Table 3: Means, Mean Differences and The Required Value of Lsd Confidence Interval in Endurance**

(Scores in minutes)

Mean Values of Players			Mean Difference	C.I.
Volleyball	Handball	Kho kho		
1.54	1.59		-0.05	0.16
1.54		1.30	0.23*	0.16
	1.59	1.30	0.28*	0.16

•Significant at 0.05 level

**4. Discussion on the findings of Endurance**

Table: 3 shows that the obtained ‘F’ value was 11.59. To be significant at 0.05 level, the required ‘F’ value was 3.15 Hence, it was proved that there were significant differences among Volleyball, Handball and kho kho players. LSD post hoc analysis was made through computation of LSD confidence interval, which is presented in Tabel: 3

The required LSD Confidence interval value to be significant at 0.05 level was 0.16 and the difference between Volleyball players and kho kho players and Handball players and kho kho players were found to be significant at 0.05 level. However, there was no significant difference between Volleyball and Handball players.

**Table 4: The Analysis of Variance on the Means Obtained Form Volleyball, Handball and Kho Kho Players in Physical Fitness Variables Leg Power**

(Scores in minutes)

	Mean Values of Players			Source of Variance	Sum of Squares	Df	Mean Squares	F
	Volleyball	Handball	Kho Kho					
				Between	0.75	2	0.38	
means	2.24	2.42	2.18					8.58*
				within	2.50	57	0.04	

Table F ratio at 0.05 level of confidence for 2 and 57 (df) = 3.15

•Significant at 0.05 level

Since the obtained ‘F’ value was greater than the required F value to be significant, LSD post hoc analysis was made, as presented in table 5.

**Table 5: Means, Mean Differences and the Required Value of Lsd Confidence Interval in Leg Streight**

(Scores in meters)

Mean Values of Players			Mean Difference	C.I.
Volleyball	Handball	Kho kho		
2.42	2.42		0.00	0.17
2.42		2.18	0.24*	0.17
	2.42	2.18	0.24*	0.17

•Significant at 0.05 level

**5. Discussion on findings on leg power**

Table 1 shows that the obtained ‘F’ value was 8.58. To be significant at 0.05 level, the required F value was 3.15. The obtained F value was greater than the required value. Hence, it was proved that there were significant differences among Volleyball, Handball and kho kho players. LSD post hoc analysis was made through computation in Table 5.

The required LSD confidence interval value to be significant at 0.05 level was 0.17 and the difference between Volleyball players and kho kho players and Handball players and kho kho players were found to be significant at 0.05 level. However, there was no significant difference between Volleyball players and Handball players.

No significant difference was found among volleyball, Handball and kho kho players in relation to speed, this might be due to the reason that some level of quickness and agility is required for each game and all these games and players by hand.

Significant difference was found among volleyball, Handball and kho kho players in relation to endurance because in each game different type of endurance level for their performance. Significant difference found among volleyball, Handball and kho kho players in relation to leg power because in Handball and volleyball continuous jump in needed for rebounding and shooting while no many jumps is needed in kho kho.

**References**

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