



Comparison of Health Related Physical Fitness Among Kho-Kho and Kabaddi Players

KEYWORDS

Health Related Physical Fitness Component: Speed, Explosive Strength, Static Strength, Cardiovascular Endurance, Flexibility.

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ABSTRACT Physical fitness comprises two related concepts: general fitness (a state of health and well-being), and specific fitness (a task-oriented definition based on the ability to perform specific aspects of sports or occupations). Physical fitness is generally achieved through correct nutrition, exercise, and rest. The sample of the present study comprised of 40 kho-kho and kabaddi players of India. Keeping the view the purpose of the study they were divided into two groups kho-kho (N=20) and kabaddi (N=20). The result shows that the Static Strength, Flexibility and Cardiovascular Endurance of kho-kho players were significantly higher than the kabaddi players. The obtained t-value 5.52, 3.32, 2.09 is more than the tabulated value $t_{0.05(38)} = 1.684$. But there is no significant difference of Speed and Explosive Strength component between kho-kho and kabaddi players. The obtained t-value 1.50, 0.380 is less than the tabulated value $t_{0.05(38)} = 1.684$.

Introduction

Health-related physical fitness is defined as fitness related to some aspect of health. This type of physical fitness is primarily influenced by an individual's exercise habits; thus, it is a dynamic state and may change. Physical characteristics that constitute health-related physical fitness include strength and endurance of skeletal muscles, joint flexibility, body composition, and cardiorespiratory endurance. All these attributes change in response to appropriate physical conditioning programs, and all are related to health. Physical fitness has been defined as a set of attributes or characteristics that people have or achieve that relates to the ability to perform physical activity. The above definition from Physical Activity and Health: A Report of the Surgeon General is the most common currently used definition of physical fitness. It was originally used by Caspersen and has been used extensively. Large scale studies examining this issue have been primarily conducted with Caucasian samples from North America (Pitetti et al. 2001; Chaniyas et al. 1998; Eichstaedt et al. 1991).

Chen (2010) pointed out that students with intellectual impairment might not be able to understand the instructions in physical education courses at schools. Furthermore, some students were unwilling to participate in physical activities even if they could understand the instruction. The long-term consequences included overweight and poor physical fitness. Regarding physiological and motor development in people with intellectual impairment, more severe impairment causes greater variance in physiological and motor development, which is also associated with health problems (Ho, 2001; Huang, 1989; Draheim, McCubbin, & Williams, 2002).

Tarandeep et al. (2012) comparison of health related physical fitness components between urban and rural primary school children. The sample was 20 Subjects, 9 years of age 10 of urban primary school children (girls) and 10 subjects of rural primary school children (girls). Five Health related physical fitness components (40 yard dash, standing broad jump, handgrip, sit and reach and 600 yard run/walk) were taken. The result shows that the static strength of rural children's was significantly higher than the urban

school children. But there is no significant difference of speed, explosive strength, flexibility and cardiovascular endurance components between urban and rural primary school children.

Methodology

Subject and Design

The present study was conducted on 40 Kho-Kho and Kabaddi players of India. Keeping in view the objectives, the players were categorized into two main groups: Kho-Kho (20), and Kabaddi (20) players. The sample was collected from Jai Public School, Jhunjhunu, Rajasthan. Their age was 14 year group.

Tools to be used:

The physical fitness battery includes a combination of physical fitness and health related task. Three of the test was used to measure grip strength, dash and standing broad jump. The other three, all indicators of health related fitness will be selected for their suitability in field conditions, specifically for ease of administration without extensive equipment. All tests were administered during the school day. Detailed descriptions of each fitness test are described given below.

- Dynamometer for static strength.
- 40 yard dash for speed.
- 600 yard run/walk for cardiovascular endurance.
- Sit and reach for flexibility.
- Standing broad jump for explosive strength.

Statistical Analysis

This was a comparative study of two group of kho-kho and kabaddi game players for finding out difference in criterion measure the mean difference of these groups were tested for significance by 't' test and level of significance was set at 0.05 level.

Analysis of Data and Result of the Study

There are at least two level at which Data are categorized, presented and analyzed statistically in this study. The selected variable and group has been compared.

Mean and Standard Deviation of Kho-Kho and Kabaddi Players on Speed Component Variable

Mean score and standard deviations of the two groups on Speed component variable are presented in Table – 1.

Table -1

Variable	Kho-Kho Players		Kabaddi Players	
	Mean	S.D.	Mean	S.D.
Speed	9.05	2.57	8.35	1.93

Comparison of Speed Component Variable of Kho-Kho and Kabaddi Players

't' test of Speed is given in Table-2 and graphically portrayed in Figure-1

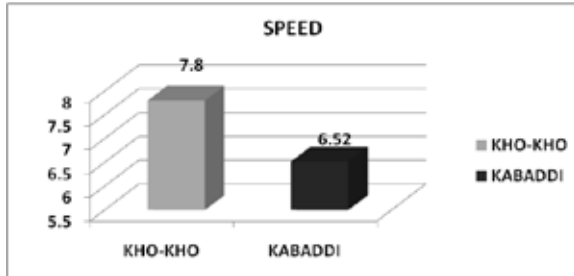


Fig:1 Comparison of Speed Component of Kho-Kho and Kabaddi Players.

Table-2 Significance of Difference of Mean in Kho-Kho and Kabaddi Players on Speed Component Variables

Group	Mean	Mean Difference	SEM	T value	Significance level
Kho-Kho Players	9.05	0.7	0.465	1.50	0.05
Kabaddi Players	8.35				

* Significant at .05 level

Tab $t_{0.05(38)} = 1.684$

It is observed from the Table-2 that means index score has increase by 0.7 after the test. Since Calculated 't' < Tabulated 't' ($1.50 < 1.684$). The result indicated that no significance difference between kho-kho and kabaddi players in the speed component level. It is evident that kho-kho and kabaddi players in speed test insignificantly, as the obtained t-value of 1.50 is less than the tabulated value $t_{0.05(38)} = 1.684$.

Mean and Standard Deviation of Kho-Kho and Kabaddi Players on Explosive Strength Component Variable

Mean score and standard deviations of the two groups on explosive strength variable are presented in Table – 3.

Table -3

Variable	Kho-Kho Players		Kabaddi Players	
	Mean	S.D.	Mean	S.D.
Explosive Strength	9.1	1.84	8.75	2.02

Comparison of Explosive Strength Component Variable of Kho-Kho and Kabaddi Players

't' test of Explosive Strength is given in Table-4 and graphically portrayed in Figure-2

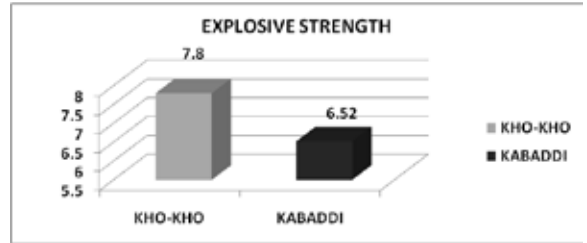


Fig:2 Comparison of Explosive Strength Component Variable of Kho-Kho and Kabaddi Players.

Table-4 Significance of Difference of Mean in Kho-Kho and Kabaddi Players on Explosive Strength Component Variables

Group	Mean	Mean Difference	SEM	T value	Significance level
Kho-Kho Players	9.1	0.35	0.92	0.380	0.05
Kabaddi Players	8.75				

* Significant at .05 level

Tab $t_{0.05(38)} = 1.684$

It is observed from the Table-4 that means index score has increase by 0.35 after the test. Since Calculated 't' < Tabulated 't' ($0.380 < 1.684$). The result indicated that no significance difference between kho-kho and kabaddi players in the speed component level. It is evident that kho-kho and kabaddi players in explosive strength test insignificantly, as the obtained t-value of 0.380 is less than the tabulated value $t_{0.05(38)} = 1.684$.

Mean and Standard Deviation of Kho-Kho and Kabaddi Players on Static Strength Component Variable

Mean score and standard deviations of the two groups on static strength variable are presented in Table – 5.

Table -5

Variable	Kho-Kho Players		Kabaddi Players	
	Mean	S.D.	Mean	S.D.
Static Strength	14.22	1.13	10.41	1.07

Comparison of Static Strength Component Variable of Kho-Kho and Kabaddi Players

't' test of Static Strength is given in Table-6 and graphically portrayed in Figure-3

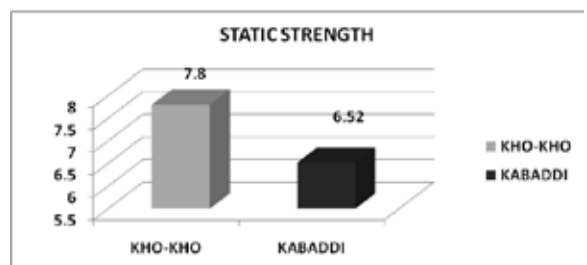


Fig: 3 Comparison of Static Strength Component Variable of Kho-Kho and Kabaddi Players.

Table-6
Significance of Difference of Mean in Kho-Kho and Kabaddi Players on Static Strength Component Variables

Group	Mean	Mean Difference	SEM	T value	Significance level
Kho-Kho Players	14.22	3.81	0.69	5.52	0.05
Kabaddi Players	10.41				

* Significant at .05 level

Tab t.0.5(38) = 1.684

It is observed from the Table-6 that means index score has increase by 3.81 after the test. Since calculated 't' > Tabulated 't' (5.52 > 1.684). The result indicated that significance difference between kho-kho and kabaddi players in the static strength level. It is evident that kho-kho and kabaddi players in static strength test differed significantly, as the obtained t-value of 5.52 is much more than the tabulated value t 0.05 (58) = 1.684.

Mean and Standard Deviation of Kho-Kho and Kabaddi Players on Flexibility Component Variable

Mean score and standard deviations of the two groups on flexibility variable are presented in Table - 7.

Table -7

Variable	Kho-Kho Players		Kabaddi Players	
	Mean	S.D.	Mean	S.D.
Flexibility	25.89	2.87	22.83	1.60

Comparison of Flexibility Component Variable of Kho-Kho and Kabaddi Players

't' test of Flexibility is given in Table-8 and graphically portrayed in Figure-4

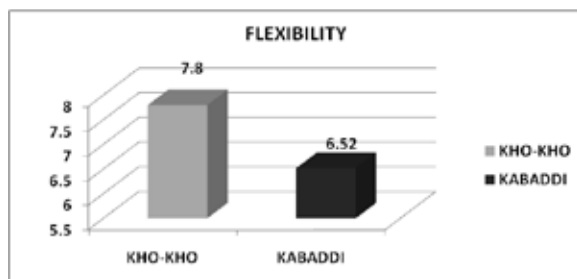


Fig:4 Comparison of Flexibility Component Variable of Kho-Kho and Kabaddi Players.

Table-8
Significance of Difference of Mean in Kho-Kho and Kabaddi Players on Flexibility Component Variables

Group	Mean	Mean Difference	SEM	T value	Significance level
Kho-Kho Players	25.89	3.06	0.95	3.22	0.05
Kabaddi Players	22.83				

* Significant at .05 level

Tab t.0.5(38) = 1.684

It is observed from the Table-8 that means index score has increase by 3.06 after the test. Since calculated 't' > Tabulated 't' (3.22 > 1.684). The result indicated that significance difference between kho-kho and kabaddi players in

the flexibility level. It is evident that kho-kho and kabaddi players in flexibility test differed significantly, as the obtained t-value of 3.22 is much more than the tabulated value t 0.05 (58) = 1.684.

Mean and Standard Deviation of Kho-Kho and Kabaddi Players on Cardiovascular Endurance Component Variable

Mean score and standard deviations of the two groups on cardiovascular endurance variable are presented in Table - 9.

Table -9

Variable	Kho-Kho Players		Kabaddi Players	
	Mean	S.D.	Mean	S.D.
Cardiovascular Endurance	7.30	1.08	6.52	0.65

Comparison of Cardiovascular Endurance Component Variable of Kho-Kho and Kabaddi Players

't' test of Cardiovascular Endurance is given in Table-10 and graphically portrayed in Figure-5

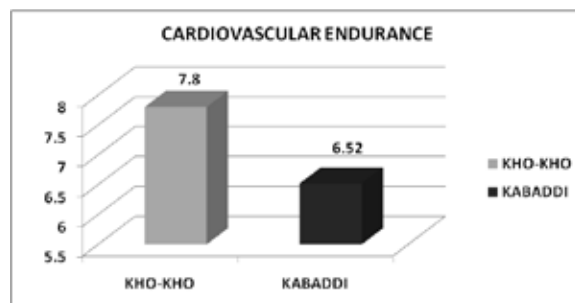


Fig:5 Comparison of Cardiovascular Endurance Component Variable of Kho-Kho and Kabaddi Players.

Table-10
Significance of Difference of Mean in Kho-Kho and Kabaddi Players on Cardiovascular Endurance Component Variables

Group	Mean	Mean Difference	SEM	T value	Significance level
Kho-Kho Players	7.80	1.28	0.61	2.09	0.05
Kabaddi Players	6.52				

* Significant at .05 level

Tab t.0.5(38) = 1.684

It is observed from the Table-10 that means index score has increase by 1.28 after the test. Since calculated 't' > Tabulated 't' (2.09 > 1.684). The result indicated that significance difference between Kho-Kho and Kabaddi players in the cardiovascular endurance level. It is evident that Kho-Kho and Kabaddi players in cardiovascular endurance test differed significantly, as the obtained t-value of 2.09 is much more than the tabulated value t 0.05 (58) = 1.684.

Conclusion

- > There is no significant difference of speed component between kho-kho and kabaddi players.
- > There is no significant difference of explosive strength component between kho-kho and kabaddi players
- > There is significant difference of static strength between kho-kho and kabaddi players. The static strength of kho-kho players was significantly higher

than the kabaddi players.

- There is significant difference of flexibility between kho-kho and kabaddi players. The flexibility of kho-kho players was significantly higher than the kabaddi players.
- There is significant difference of cardiovascular endurance between kho-kho and kabaddi players. The cardiovascular endurance of kho-kho players was significantly higher than the kabaddi players.

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