



An evaluation of selected physical fitness variables of Kabaddi and Kho-Kho players at the University level

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ABSTRACT

The aim of this research has been to evaluate the physical health of university-level players of Kho-Kho and Kabaddi. 200 male players (100 from the each game) from four Haryana universities—Guru Jambheshwar University, Hissar; Kurukshetra University, Rohtak; Maharishi Dayanand University, Rohtak; and Ch. Devi Lal University, Sirsa—were examined for 4 physical fitness components: speed, endurance, flexibility, and strength. With the assistance of lab technicians, coaches, experienced players, and physical education teachers, data was analyzed using standard technologies. Although the players of both games had comparable strength, the Kho-Kho players have been represented to have greater endurance, speed, and flexibility than the Kabaddi players. This is due to the fact that in Kho-Kho, players engage in a rigorous 9-minute run between chasers and many sit-and-run sessions, but in Kabaddi, players engage in a 35-second raid in the opponent's court. According to the study, players of Kho-Kho were physically fitter than those in Kabaddi. The investigation's findings include creative data that coaches and physical trainers can utilize to improve players' performance in the two games through training modules.

Keywords: Kabaddi; Physical fitness variables; Kho-Kho

Introduction

Increasing physical fitness is essential for competitive sports performance & a major factor in determining one's success in the game (Eduardo et al., 2013). Two traditional Indian sports are kabaddi and kho-kho. In Iran, kabaddi is another customary game. These two games call for a particular level of strength, speed, and agility (Mayur et al., 2014). Aerobic and anaerobic fitness, agility, dynamic balance, individual proficiency, lung capacity, neuromuscular coordination, and rapid reflexes are the factors that determine an athlete's performance in Kabaddi and Kho-Kho. With rigorous training, one can improve their strength and sprinting (Adams et al., 1992; Rimmer, 2000). For a player to perform at a high level in sports like Kabaddi and Kho-Kho, they must develop their muscular power and strength at the fastest possible rate (Dey et al., 1993; Potach et al., 2008). A training program's exercises must be adjusted to each player's unique needs with respect to the biomechanical along physiological aspects of the sport or athletic activity (Chimera et al., 2004; Stemm, 2007; Arazi et al., 2011; Saez-Saez et al., 2008; 2012; Chundu et al., 2014). The study's conclusions will be important in determining how much instruction the players require.

Strength, speed, and coordination are the key components of Kabaddi and Kho-Kho fitness, which prepare athletes to meet the physical and mental obstacles they will experience during their competitive sports careers. A player needs a certain level of fitness to execute the unique movements needed for the sport, which are challenging for a non-athlete to execute in their daily routine. Because overall fitness is a major factor in particular fitness, athletes must place equal emphasis on general and specific fitness in order to succeed (Gaurav et al, 2011).The essential prerequisite for engaging in any sporting activity is physical fitness. In addition to physical fitness, motor skills like strength, speed, flexibility, as well as endurance are necessary for success in the sports. Sports coaches along with trainers place a strong emphasis on helping players develop their motor skills and physical fitness, a concept called conditioning. An effective conditioning program is the cornerstone of a sportsperson's whole training regimen. The enhanced degree of motor skills attained by the athlete that is necessary for the particular sport is known as specialized fitness.

Players of Kho-Kho & Kabaddi are equally conducive to skill development. The goal of the current study is to analyse the physical levels of fitness of the players who need to tone up in Kho-Kho and Kabaddi. Trainers, Coaches and physical education teachers for the Kho-Kho along with Kabaddi players can create physical fitness of the sportsmen by comparing the fitness profiles of players of two games.

Materials and Methods

Sample of the Study: 200 male Kabaddi & Kho-Kho players, ages 18-25, were the subjects of an investigation. Stratified random sampling was used to choose one hundred players from each game. The study looked at players from four Haryanan universities: Guru Jambheshwar University in Hissar, Maharishi Dayanand University in Rohtak, Kurukshetra University, Guru Jambheshwar University in Kurukshetra, and Ch. Devi Lal University in Sirsa. Every player was qualified to participate in intercollegiate and intervarsity competitions (Table 1).

Table: 1. Distribution of Sample

S. no.	University	Kho-Kho	Kabaddi	Total
1.	Kurukshetra University, Kurukshetra	30	35	65
2.	G.J. U. Hisar	20	20	40
3.	M.D. University, Rohtak	35	30	65
4.	Ch. Devi Lal University Sirsa	15	15	30
Total		100	100	200

Design of study: 4 physical attributes—endurance, explosive strength, flexibility, and speed—that influence athletes' fitness were chosen for this investigation. utilized to evaluate the players' physical fitness after tests.

(i) Endurance: A 600 Yard Run (AAPHER Test) in 400 m track was administered to test the endurance of the subjects. Every subject received instructions on where to begin and end. They needed to cover 600 yards of track. The players were given an explanation of the exam prior to its start. As they approached the starting line, each

subject stood. On the signal 'Go' the subjects started running and timers started the stopwatches at the finish line they read out the timings of each subject as they crossed the finish line and a recorder noted down the timings. The exam might be finished by the subjects walking, running, or doing both. The final score was expressed in minutes and seconds.

(ii) Speed: The 50-yard Dash Test was used to evaluate the individuals' speed. Before the testing started, the occurrence was described. The subject took up a standing starting position behind the starting line following a brief warm-up. Two volunteers were requested to run simultaneously to get the good outcomes. The starter signalled the timer to start by saying, "Ready, Go," and sweeping his arm downward. The participants began sprinting as fast as they could towards the 50-yard finish line. There could only be one trail. Before the order "Go," subjects were not permitted to cross the starting line. They were not permitted to slow down until they had passed the finish line and were expected to run as quickly as they could. To the closest tenth of a second, the amount of time that passed between the start signal and the runner's crossing of the finish line was calculated.

(iii) Strength: The standing Broad Jump Test has been administered to the subjects to measure the leg power (strength) followed by Barrow's Short Battery (1954). Before the test started, the event was described and demonstrated. The individual positioned their feet parallel to one another and their toes slightly below the jump takeoff line. The person was able to bend their legs and swing their arm back. The jump was completed by simultaneously extending knees and swinging an arm forward while in the pit. They allowed three trails in a row. The heel or any other body part that contacted the pit closest to the takeoff line was measured starting from the takeoff line. It was forbidden to run or step, and the best one was measured to the closest centimeter. The score was the distance in inches between the starting line and the closest fall upon landing. The score was determined by recording the best of the three tries. The tests were found quite valid on various test items of the AAPHER test battery are correlated significantly with various motor of physical fitness factors.

(iv) Flexibility: The goal of the Bend & Reach Test was to analyze the hamstring muscles' ability to extend as well as the hip and trunk's flexibility. The yardstick was taped to the ground after its 15-inch mark was aligned with a line on the ground. The participant was instructed to take a seat, align his heels near the edge of the 15-inch mark, and slide his seat back past the yardstick's end. With the subject's heels not more than 5 inches apart, they were asked to stretch forward slowly with knee locked and by touching the fingertips of both hands as several inches down the stick as possible. The subject was asked not to bend the knees. The Head was supposed to bend forward. The test result was the best of the 3 tries, calculated to the closest quarter of an inch.

Expert players, coaches, and physical education teachers assisted with the testing. The participants were cooperative and enthusiastic about the project. The information was tallied and subjected to statistical analysis using the SD, Mean, and Z-ratio in order to determine the importance of the variations in scores among the Kho-Kho & Kabaddi players.

Results and discussion

According to the specifications of the research on the Kho-Kho along with Kabaddi, data was gathered on four different physical characteristics, with the participation ranging up to the level of inter-college. The gathered information was statistically examined to make the appropriate deductions. According to our theory, there are no physiological differences between the two groups of players of different games.

Table: 2. For Kabaddi and Kho-Kho players, descriptive statistics and the Z-ratio of psychological variables

S. No.	Physiological variables	Kabaddi		Kho-Kho		Z-ratio
		Mean	S.D.	Mean	S.D. [#]	
1.	Endurance	1.77	0.46	1.63	0.40	2.00**
2.	Speed	6.61	6.41	0.38	0.37	3.33**
3.	Strength	2.18	0.30	2.15	0.28	0.75
4.	Flexibility	3.36	3.00	4.25	2.20	1.89

#=**= Significance at 0.01 level of confidence; SD; Degree of freedom = 198; No. of players: Kho-Kho (100); Kabaddi (100).

The z-ratio of the mean difference, which favours Kho-Kho players by 2.00, is shown in Table 2 above and is significant at a 0.05 level of confidence. As an outcome, there have been noticeable variations in the endurance of Kho-Kho and Kabaddi players on the 600-yard run test. Compared to Kabaddi players, Kho-Kho players had a lower mean score. It implies that compared to Kabaddi players, Kho-Kho players have more endurance.

The mean scores of Kho-Kho along with Kabaddi players on the 50 Yard Dash test reveal a z-ratio of mean difference is 3.33 that is majorly at a 0.05 level of confidence. Therefore, on the 50 Yard Dash Test, there is a noticeable difference in speed between the Kabaddi along with Kho-Kho players. Compared to Kabaddi players, Kho-Kho players have a lower mean score. In comparison to Kabaddi players, it indicates that Kho-Kho players are faster. Comparably, Kabaddi and Kho-Kho players scored 2.18 and 2.15 on the standing broad jump test, correspondingly; the z-ratio of the mean difference has been 0.75, which is not important at the 0.05 level of confidence. As a result, players of Kho-Kho & Kabaddi have equal strength.

Kho-Kho and Kabaddi players' mean Sit and Reach test scores and the z-ratio of the mean difference, that is 1.89 and important at the 0.05 level of confidence. As an outcome, the flexibility component of Kho-Kho and Kabaddi players differs greatly. Compared to Kabaddi players, Kho-Kho players had a lower mean score. It implies that compared to Kabaddi players, Kho-Kho players are more flexible.

According to the study, while both Kabaddi along with Kho-Kho players have comparable strength, Kho-Kho players have more endurance, speed, and flexibility. The reason for this could be that players in Kho-Kho often have to sit and run between the chasers. This requires flexibility, speed and endurance. In the case of Kabaddi, the players have a 35-second running session during the raid in the opposite court.

The findings of the current research as discussed here are completely supported by other same research performed by the investigators i.e. Johnson (1972), Bandura (1999), Martens (1976), Collins (1982),

Kane (1996), Hardy (1999), Biddle (2000), Boyce (2001), Riahard (1986).

Conclusion

The results of this study have implications for physical education and sports in our nation to improve adolescent athletes' performance. The current study's main ramifications include the possibility of assisting Kho-Kho along with Kabaddi players in improving their physical fitness in order to maximize their performance potential. The study's conclusions can be applied to the development of screening procedures, training plans, and player mentoring and counselling. It is possible to do research on the distinctions between athletes from different sports in order to screen players for training programs. With a larger sample size and more physical factors analyzed using sophisticated statistical techniques, the results are applicable to physical educators, administrators, sports coaches, and sports organizers.

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