



Effect Of Sand Bag Training On Selected Physical Fitness Variables Among Kabaddi Players

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Abstract: Physical fitness is a crucial component of an individual's overall well-being, encompassing not only physical health but also social, emotional, and mental fitness. It is a fundamental requirement for daily life, broadly defined as the ability to perform routine tasks efficiently without undue fatigue. Strength endurance plays a vital role in all sports movements, whether fast or slow, as athletes must perform under varying levels of fatigue. Agility, a key athletic trait, is a combination of strength, reaction time, speed, power, and coordination. It is essential for movements such as dodging, zigzag running, sudden stops and starts, and rapid changes in body position. Sandbag training is a high-intensity, time-efficient, and versatile training method that involves performing a series of exercises in quick succession with minimal rest between sets. This training is particularly beneficial for athletes, as it enhances physical fitness variables critical to performance. In sports like kabaddi, for instance, explosive power a combination of strength and speed is necessary for optimal performance. Similarly, sandbag exercises have been shown to significantly improve key physical fitness attributes in Kabaddi players. The study aimed to examine the effects of sandbag training on selected physical fitness variables among Kabaddi players. To achieve this, thirty male Kabaddi players, aged between 21 and 24 years, were selected as subjects. They were students of the Department of Physical Education, at St. John's College of Physical Education, Veeravanallur, Tirunelveli, Tamilnadu. The participants of the study patriate into two equal different groups with holding of fifteen each: a sandbag training group and a control group. The sandbag training group followed a structured regimen, performing three sets per exercise per session at an intensity of 60% to 80%, with a progressive increase in load over the training period. Strength endurance and agility were chosen as the criterion variables, assessed using sit-ups and the shuttle run test, respectively. Analysis of Covariance (ANCOVA) was used to determine significant differences between the groups. The results indicated a significant improvement in strength endurance and agility among the sandbag training group compared to the control group. These findings suggest that sandbag exercises are highly effective in enhancing the physical fitness of Kabaddi players, particularly in terms of endurance and agility.

Keywords: Sand bag training, Physical Fitness, Strength Endurance, Agility

1. INTRODUCTION

Physical fitness is an essential component of an individual's overall well-being, encompassing strength, endurance, agility, flexibility, and coordination. It plays a crucial role in enhancing athletic performance and daily life activities. In competitive sports like Kabaddi, players require a high level of physical fitness to perform efficiently under intense conditions. The sport demands quick reflexes, explosive power, agility, and muscular endurance to execute movements such as dodging, tackling, and rapid directional changes effectively. Among the various training methods used to improve physical fitness, sandbag training has gained popularity due to its effectiveness in enhancing strength, endurance, and agility. Sandbag training involves lifting, carrying, and manipulating an unstable weight, requiring athletes to engage multiple muscle groups and stabilize their bodies dynamically. This high-intensity, time-efficient training method helps develop core strength, grip strength, and functional power, which are essential for Kabaddi players.

Additionally, the unpredictable nature of sandbag movements simulates the dynamic challenges faced in a Kabaddi match, improving the players' ability to react quickly and efficiently.

Despite the increasing recognition of sandbag training in strength and conditioning programs, limited research has been conducted on its specific impact on Kabaddi players. This study aims to investigate the effects of sandbag training on selected physical fitness variables, particularly strength endurance and agility, among Kabaddi players. By analyzing these variables, the study seeks to provide insights into the effectiveness of sandbag exercises in improving performance-related fitness components for Kabaddi players.

2. METHODOLOGY

The study examined of sand bag training on selected physical fitness variables such as strength endurance and agility among college men kabaddi players. To achieve this, thirty male kabaddi players are studying in the St.Johns college of Physical Education, Veeravanallur, Tirunelveli, TamilNadu in the age group of 21 to 24 years were selected as subjects at random. The participants of the study patriate into two equal different groups with holding of fifteen each: a sandbag training group and a control group.

The selected criterion variables such as strength endurance and agility were assessed using standard tests and procedures, before (pre-test) and after (post-test) training Regimen for both experimental and control groups by using sit-ups and shuttle run respectively. The selected subjects had undergone the sand bag training for eight weeks, with three days per week in alternate days. After 10 to 15 minutes of warm-up the subjects underwent their respective sand bag training programme and the subjects performed sand bag exercises. The control group did not participate in any specialized training during the period of study.

3. EXPERIMENTAL DESIGN

The study mainly aimed to find out effect of sand bag training on selected physical fitness variables such as strength endurance and agility among kabaddi players. To achieve this, thirty male kabaddi players are studying in St. Johns college of Physical Education, Veeravanallur, Tirunelveli, Tamil Nadu in the age group of 21 to 24years were selected as subjects at random. The selected subjects were divided into two equal groups of fifteen subjects each namely sand bag training group and control group. The selected criterion variables such as strength endurance and agility were assessed using standard tests and procedures, before (pre-test) and after (post-test) The selected subjects were divided into two groups. I Group attended sand bag training and Another Group did not participate on bar with experimental group but ideally acted as control.

The data were analyzed statistically by using analysis of covariance (ANCOVA). Whenever the 'F' ratio for adjusted post-test means was found to be significant, Scheffe's test was followed as a post hoc test to determine which of the paired means difference was significant. All the subjects were tested in the selected physical fitness variables namely strength endurance, agility. The pre- test was taken before the start of specific training and post-test was taken after the training was completed.

3.1 TRAINING PROCEDURE

Thirty male kabaddi players are studying in the St. Johns college of Physical Education, Veeravanallur, Tirunelveli, Tamil Nadu in the age group of 21 to 24years were selected as subjects at random. The participants of the study patriate into two equal different groups with holding of fifteen each: a sandbag training group and a control group. The selected criterion variables such as strength endurance and agility were assessed using standard tests and procedures, before (pre-test) and after (post-test) training Regimen for both experimental and control groups by using sit-ups and shuttle run respectively. The selected subjects had undergone the sand bag training for eight weeks, with three days per week in alternate days. After 10 to 15 minutes of warm-up the subjects underwent their respective sand bag training programme and the subjects performed sand bag exercises.

The control group did not participate in any specialized training during the period of study. The data were analyzed statistically by using analysis of covariance (ANCOVA). Whenever the 'F' ratio for adjusted post-test means was found to be significant, Scheffe's test was followed as a post hoc test to determine which of the paired means difference was significant. All the subjects were tested in the selected physical fitness variables namely strength endurance, agility. The pre- test was taken before the start of specific training and post-test was taken after the training was completed.

4. STATISTICAL TECHNIQUE

To find out the difference between pre – test of each group, paired ‘t’ test was used. Analysis of covariance (ANCOVA) was computed because the subjects were selected random, but the groups were not equated in relation to the factors be examined. Hence the difference between means of the four groups in protest had to be taken into account during the analysis of the post-test difference between the means. This study was applied by the application of the analysis of covariance, where the post means were adjusted for difference in the initial means, and the adjusted means were tested for significance.

5. RESULT AND DISCUSSION

The experimental design used for the present investigation was random group design involving 30 subjects for training effect. Analysis of Covariance (ANCOVA) was used as a statistical technique to determine the significant difference, if any, existing between pre-test and post-test data on selected dependent variables separately and presented in Table - I.

TABLE – I
ANALYSIS OF COVARIANCE AMONG SAND BAG TRAINING EXPERIMENTAL GROUP AND CONTROL GROUP ON STRENGTHENDURANCE AND AGILITY

Variables	Test		Sand bag Training Group	Control Group	Source of Variance	SS	Df	Mean Square	‘F’ Ratio
Strength Endurance	Pre test	Mean	47.00	47.27	Between	0.533	1	0.533	0.112
		S.D	1.93	2.40	Within	132.92	28	4.75	
	Post test	Mean	52.92	47.52	Between	218.70	1	218.7	48.344*
		S.D	2.16	2.10	Within	126.67	28	4.53	
	Adjusted Post test	Mean	52.94	47.52	Between	233.78	1	233.785	112.55*
					Within	56.081	27	2.077	
Agility	Pre test	Mean	10.93	10.99	Between	0.033	1	0.033	0.742
		S.D	0.252	0.162	Within	1.259	28	0.04495	
	Post test	Mean	10.73	10.96	Between	0.385	1	0.385	22.049*
		S.D	0.123	0.141	Within	0.489	28	0.0175	
	Adjusted Post test	Mean	10.73	10.96	Between	0.336	1	0.336	20.307*
					Within	0.446	27	0.01653	

Table - I reveal the F-value for pre-test 0.112 and post-test 48.34 among the experimental groups sand bag training group and control group on strength endurance. To be significant at 0.05 level for degree of freedom 1, 28 the required critical value was 3.23. The F-ratio (0.112) obtained for pre-test was found to be not significant since it does not reach the required critical value 3.23. Regarding the F-ratio for post-test mean (48.34) it was found to statistically significant since it was higher than their required critical value 3.23. Based on F-ratio it was inferred that experimental group and control group are equal in this performance of strength endurance before they were included into their respective treatment whereas, after completion of 8-week treatment period, experimental groups and control group were significantly different from one another in the performance of strength endurance.

The F-value for pre-test 0.742 and post-test 22.04 among the experimental groups sand bag training group and control group on agility. To be significant at 0.05 level for degree of freedom 1, 28 the required critical value was 3.23. The F-ratio (0.742) obtained for pre- test was found to be not significant since it does not reach the required critical value 3.23. Regarding the F-ratio for post-test mean (22.04) it was found to statistically significant since it was higher than their required critical value 3.23. Based on F-ratio it was inferred that experimental group and control group are equal in this performance of agility before they were included into their respective treatment whereas, after completion of 8-week treatment period, experimental groups and control group were significantly different from one another in the performance of agility.

6. CONCLUSION

In the framing of training while designing the training programme the effect of varied sand bag training programme is explained positively and physical fitness variables of kabaddi players. This is due to integrating the sand bag training which requires the players to perform the exercises in a fatigue stage, resulting in potentially increasing endurance. Hence the kabaddi players can use this type of training as a module in order to achieve high level skill performance in the game of kabaddi. Based on the results of the study, it was concluded that the sand bag training program has resulted in significant increase in selected physical fitness variables such as strength endurance and agility.

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