



IMPACTS OF LADDER TRAINING ON SELECTED PHYSICAL FITNESS VARIABLES AMONG KABADDI PLAYERS

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ABSTRACT

This study was designed to investigate the impacts of ladder training on selected physical fitness variables among intercollegiate women kabaddi players. Thirty women kabaddi players were randomly selected from Dr. Sivanthi Aditanar College of Engineering, Tiruchendur, Govindammal Aditanar College for women, Tiruchendur, Wavoo Wajejha women's college of arts and science, veerapandipattanam were participant selected. The age of the participant was ranged from 18 to 25 years. They were divided into two equal groups. The group 1 is considered as experimental group (ladder training) and group 2 was considered as control group. Pre-test was conducted on Speed, Agility and leg explosive power for both the groups and the reading were carefully recorded in their respective unit as pre-test score. After pre test, experimental group was treated with specific ladder training, for duration of 60 minutes, three days per week for a period of twelve weeks. The control group was not treated with any special training. After twelve weeks of training post test was conducted and the reading were carefully recorded in their respective units as post test score. The pre and post test were taken for analysis. The collected data on physical fitness variables due to twelve weeks ladder training was analysed by dependent 't' test with 0.05 level of confidences. From the results of the study, it was found that there was a significant improvement on physical fitness variables among intercollegiate women kabaddi players.

KEYWORDS: Ladder training, Physical Fitness Variables, Kabaddi Players.

INTRODUCTION

Physical fitness plays a crucial role in the success and performance of athletes across various sports disciplines. Kabaddi, a highly dynamic and contact sport, requires athletes to possess a unique set of physical attributes to excel. Among these attributes, agility, speed, coordination, and cardiovascular endurance are particularly essential for Kabaddi players to exhibit their skills effectively.

Ladder training, also known as agility ladder training, has gained popularity as an effective method for enhancing agility, quickness, footwork, and overall athletic performance. This training technique involves performing a variety of footwork patterns and movements in and around a ladder-like structure on the ground. It offers a comprehensive and systematic approach to develop neuromuscular coordination, spatial awareness, and rapid change-of-direction abilities.

Understanding the impacts of ladder training on specific physical fitness variables among Kabaddi players can provide valuable insights into optimizing their training regimens. The selected physical fitness variables for this study include agility, speed, coordination, and cardiovascular endurance. By examining the effects of ladder training on these variables, coaches, trainers, and athletes can gain evidence-based knowledge to improve their training protocols and ultimately enhance performance on the Kabaddi court.

STATEMENT OF THE PROBLEM

The purpose of this study was to investigate the effects of ladder training on selected physical fitness variables among intercollegiate women Kabaddi players. Kabaddi is a highly demanding and physically challenging sport that requires athletes to possess a unique set of physical attributes, including agility, speed and leg explosive power. The success and performance of Kabaddi players depend on their ability to exhibit these physical fitness variables effectively during matches. While ladder training has been widely recognized as an effective method for improving physical fitness in various sports, limited research has specifically explored its impact on intercollegiate women Kabaddi players. Therefore, it is essential to examine the effects of ladder training on these players to better understand its potential benefits and optimize their training programs. By investigating the effects of ladder



training on selected physical fitness variables, such as agility, speed and leg explosive power this study aims to provide evidence-based insights that can assist coaches and trainers in developing tailored training protocols for intercollegiate women Kabaddi players, thereby enhancing their performance on the Kabaddi court.

EXPERIMENTAL DESIGN

The selected thirty subjects were randomly divided into two equal groups consist of 15 each such an experimental group and control group. Pre-test was conducted on Speed, Agility and leg explosive power for the two groups and the reading were carefully recorded in their respective unit as pre-test score. After pre test, experimental group was treated with specific ladder training, for duration of 60 minutes, three days per week for a period of twelve weeks. The control group was not treated with any special training. After twelve weeks of training post test was conducted and the reading were carefully recorded in their respective units as post test score. The pre and post test were taken for analysis.

TRAINING PROGRAM

The training program is design for 60 minutes per session in a day, three days in weeks for a period of twelve weeks duration these 60 minutes included 10 minutes warm up and 10 minutes warm down remaining 40 minutes allotted for ladder training program. Every four weeks 10% intensity is increase from 50% to 60% of work load. The training load is increased from the maximum working capacity of the subjects.

STATISTICAL TECHNIQUE

The collected data on physical fitness variables due to twelve weeks ladder training analyzed by using means and standard deviation. In order to find out the significant changes if any dependent ‘t’ test will be applied 0.05 level of confidences fixed to level of significant.

RESULTS

Table 1: Computation of ‘t’ ratio between pre and post-test means of experimental group on physical fitness variables

Experimental Group					
Physical Fitness Variables	Pre/Post test	Mean	Std. Deviation	Std Error Mean	‘t’ Ratio
Speed	Pre-Test	8.63	0.58	0.24	10.28*
	Post-Test	8.38	0.63		
Agility	Pre-Test	11.99	0.60	0.42	11.06*
	Post-Test	11.85	0.60		
Leg Explosive power	Pre-Test	1.65	0.12	0.01	20.40*
	Post-Test	1.77	0.12		

*Significant at 0.05 level of confidence (2.145), 1 & 14.

Table 1 reveals that the Computation of ‘t’ ratio between pre and post-test means of experimental group on Physical fitness variables. The ‘t’ ratio on Speed, Agility and Leg Explosive power are 10.28, 11.06 and 20.40 respectively. The required table value was 2.14 for the degrees of freedom 14 at 0.05 level of significance. Since the obtained ‘t’ ratio values were greater than the table value, it was found statistically significant.

Table 2: Computation of ‘t’ ratio between pre and post-test means of Control group on Physical Fitness variables

Control Group					
Physical Fitness Variables	Pre/Post test	Mean	Std. Deviation	Std Error Mean	‘t’ Ratio
Speed	Pre-Test	8.63	0.58	0.55	1.12
	Post-Test	8.73	0.57		
Agility	Pre-Test	11.95	0.60	0.03	1.17
	Post-Test	12.14	0.61		
Leg Explosive power	Pre-Test	1.56	0.12	0.89	1.04
	Post-Test	1.53	0.11		

*Significant at 0.05 level of confidence (2.145), 1 & 14.

Table 2 reveals that the Computation of ‘t’ ratio between pre and post-test means of control group on Physical fitness variables. The ‘t’ ratio on Speed, Agility and Leg Explosive power are 1.12, 1.17 and 1.04 respectively. The required table value was 2.14 for the degrees of freedom 14 at 0.05 level of significance. Since the obtained ‘t’ ratio values were lower than the table value, it was found statistically no significant.



DISCUSSION ON FINDINGS

The effect of ladder training is a fantastic training which has been found to be beneficial for the kabaddi players. To study the ladder training on physical fitness variable of intercollegiate women kabaddi players, it was tested under, to differentiate between ladder training group and control group. It also improves the overall playing ability, game tactics, anaerobic capacity, quickness, eye hand coordination and other than some physical fitness components are namely speed, agility, and power.

The following studies was revealed that **Vallimurugan et al., (2022)¹**, Effects of Circuit Training on Selected Physical Fitness Variables among Hockey Players. **Vallimurugan et al., (2022)²** Effects of Ladder Training on Selected Physical Fitness Variables among Hockey Players. **A hidyat (2022)⁴**, effect of agility ladder exercise on agility of participants extra-curricular futsal at bina darma university. The result of the study supports the result of the present study. **V Pratheep Kumar et al., (2019)⁷** Effect of ladder training and combination of ladder training with plyometric training on selected skill performance variable of school basketball players. The result of the study supports the result of the present study. These finding had not been previously replicated for a sample of college students. The result of the study showed that the control group was not significantly improved.

CONCLUSIONS

Based on the findings and within the limitation of the study it is noticed that practice of ladder training helped to improve physical fitness variable among intercollegiate women kabaddi players. It was also seen that there is progressive improvement in the selected criterion variables of ladder training group of intercollegiate women kabaddi players after twelve weeks. Further, it also helps to improve speed, agility and leg explosive power. It was concluded that individualized ladder training group showed a statistically significant over the course of the treatment period on physical fitness variables of among intercollegiate women kabaddi players.

1. It was concluded that individualized effect of control group showed a statistically insignificant over the course of the period on selected physical fitness variables of intercollegiate women kabaddi players.
2. The results of comparative effects lead to conclude that the ladder training group had better significant improvement on selected physical fitness variables (speed, agility and leg explosive power) of intercollegiate women kabaddi players as compared to their performance with control group.

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