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## Effect of kalaripayattu on physical fitness variables among college students

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### Abstract

Kalaripayattu is an Indian form of martial art which is considered to be oldest, which originated in Kerala. The primary aim of the research was to ascertain the effect of kalaripayattu on physical fitness variables college students. There are different styles of Kalaripayattu called Vadakkan – Northern style, Thekkan – Southern style, and Madhya Kerala – Central style of Kerala. All use the same weapons but methods and styles were strongly influenced by different regional masters. In this study southern style of kalari was used. The purpose of the study was to find the effect of kalatipayattu on cardiovascular endurance, Balance, Explosive strength and Agility. Twenty college men from MES College, Marampally, Aluva were taken as subjects.

Southern style kalaripayattu was administered for a period of 1 ½ hours for a total of 8 weeks. The study showed significant changes in all the selected variables.

**Keywords:** Kalaripayattu, physical fitness, kalari, college men

### Introduction

Exercise is physical activity done regularly to improve, maintain, or slow the loss of fitness. Physical fitness is the capacity to perform physical activities with vigor and alertness and without undue fatigue. Fit people have more energy to pursue leisure activities. Physical fitness is defined as the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypokinetic diseases and to meet emergency situations. (By Brian D. Johnston)

### Kalaripayattu

'Kalari' means place of training and 'Payattu' means training of martial arts. As the training of martial arts is done from Kalari, this is called Kalaripayattu.

Kalaripayattu from Kerala is probably the oldest martial art form in the world. It is said that Bodhi Dharma took this art form to China, which it is claimed to have evolved into Kung Fu and other forms of Chinese martial arts.

### Types of Kalaripayattu

There are different styles of Kalaripayattu called Vadakkan-Northern style, Thekkan-Southern style, and Madhya Kerala – Central style of Kerala. The Vadakkan style is more traditional, it demands that the whole body be covered with oil and implies a precise explanation during the training itself. Southern style is more silent, and uses all movements that can be later found in the different martial art like Judo, Karate, Kunfu, Tai chi, Wrestling and Gymnastics. These types of movements like various types of kicking, punching, diving and all defensive and offensive movements. (Kalaripayattu by Balakrishnan P)

**Muscular Power.** is the ability to generate as much force as possible, as quickly as possible.

When the muscles in the body are used to perform high-intensity movements in short bursts, power is used

**Balance:** is the ability to stay upright or stay in control of body movement

**Agility:** is the ability to change the direction of the body in an efficient and effective manner

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**Reviews of Literature**

Chandran CK, *et al* conducted a study on Respiratory functions in Kalaripayattu practitioners.. Lung function tests were carried out in ten Kalari practitioners. Residual volume was measured by indirect method. Higher lung volumes and flow rates were achieved in Kalari practitioners compared to age and height-matched controls. Better mechanical factors and lower airway resistance influenced during Kalari practice might have benefited in improving Lung volumes and flow rates.

**Objectives**

- To find out the effect of Kalaripayattu on physical fitness variables
- To study Kalaripayattu is more effective to improve the physical fitness

**Hypothesis**

It is hypothesis that the practice of Kalaripayattu will significantly improve the physical fitness of college students in relation to cardiovascular fitness, Explosive Strength, Balance and Agility

**Significance of the study**

- The finding of the study will add to the quantum of knowledge in physical education, especially in the area of physical fitness in college students
- The study will enlighten the importance of practicing Kalaripayattu on healthy livings
- This study is try to investigate the impact and effectiveness of Kalaripayattu training
- Research regarding the effect of Kalaripayattu on this particular group of college students have not yet been conducted

**Limitations**

The following are the limitations of this study:

1. The hereditary, culture and environmental factors, which will influence the criterion variables are recognized as limitation
2. Previous Practice of sports or other physical fitness activities are not taken into consideration
3. The subjects living conditions, diet, lifestyle, climatic condition, personnel habits, emotional status, psychological imbalance, family problems and motivational factors were not taken into consideration for this study.

**Delimitation**

The study is delimited to the following aspects:

1. The study restricted to 20 randomly selected adults from Degree Prgramme, MES College Marampally, Aluva,

**Pretest**

S. No	Name of the Group	Mean	Standard Deviation	Standard Error of the Mean	't' Ratio
1	Control	1.7920	0.1458	0.0461	1.7047
2	Experimental	1.6610	0.1732	0.0548	

**Post Test**

S. No	Name of the Group	Mean	Standard Deviation	Standard Error of the Mean	't' Ratio
1	Control	1.8570	0.1493	0.0472	2.1586*
2	Experimental	1.6740	0.1812	0.0573	

Ernakulam District, Kerala

2. The physical fitness variables is restricted to Cardiovascular fitness, Balance and Agility
3. The age of the subjects range from 19 – 21 (nineteen to twenty one) years
4. Selected Southern style of Kalaripayattu is administrated in the selected subjects
5. The Kalaripayattu practice is administrated in the evening for a maximum period of 1 ½ hours for a total of 8 weeks.

**Methodology**

The subjects for the study were selected from different under graduates of MES College Marampally, Aluva, Ernakulam District, Kerala State. Twenty (20) adults in the age group of 17 – 21are selected randomly and divide into two groups,

1. Control group
2. Experimental group.

Kalaripayattu training is given to experimental group. Control group is not given any special training. The criterion measures were tested before and after the 8 weeks of experimental period hence initial and final scores of the two groups are obtain. The obtain data is analyzed with statistical tool 't' test.

**Selection of variables**

**1. Physical Fitness Variable**

- 1) Muscular Power
  - 2) Balance
  - 3) Agility
- Muscular Power is measured by using Standing Broad Jump
  - Balance was measured by using stork stand test
  - Agility was measured by using Illinois agility test

**Analysis of Data and Results of the Study**

The analysis of data pertaining to this study has been presented in this chapter. Group I served as the control group and group II served as the experimental group. The study has been examined by't' test for each variables separately in order to determine the difference between controlled and experimental group.

The level of significance was fixed at 0.005 level of confidence throughout the study. The data collected from the subject were statistically analyzed by using't' test with the degree of freedom 18.

The results are presented in this chapter.

**Computation Of Mean, Standard Deviation And Standard Error Of The Mean Of Muscular Power, Balance And Agility For The Control And The Experimental Group Muscular Power**

**Balance Pretest**

S. No	Name of the Group	Mean	Standard Deviation	Standard Error of the Mean	't' Ratio
1	Control	3.900	0.6701	0.2948	0.6829
2	Experimental	4.500	1.7464	0.5523	

**Post Test**

S. No	Name of the Group	Mean	Standard Deviation	Standard Error of the Mean	't' Ratio
1	Control	4.2000	2.1354	0.6753	2.6496*
2	Experimental	7.2000	1.9391	0.6132	

**Agility Pretest**

S. No	Name of the Group	Mean	Standard Deviation	Standard Error of the Mean	't' Ratio
1	Control	12.4800	0.7692	0.2432	0.1086
2	Experimental	12.4300	1.2354	0.3907	

**Post Test**

SI No	Name of the Group	Mean	Standard Deviation	Standard Error of the Mean	't' Ratio
1	Control	12.56	0.3826	0.1210	3.0189*
2	Experimental	11.60	0.6356	0.2010	

It is observed from table III that there is no significant difference between the two groups in the pretest but there is a significant difference in the post test, as the 't' ratio of 3.0189 is higher than the table value 1.734. Hence the hypothesis was accepted and the result of study is significant. This shows that kalaripayattu is having significant effect on improvement of agility.

**Summary, Conclusions and Recommendations****Summary**

The purpose of this study was to find out the effect of Kalaripayattu practice on physical fitness in College Students. The investigator selected 20 male adults as subjects. Their age ranged from 17 to 21 years old. The 20 subjects were randomly equated into two groups i.e., group I and group II. Group I served as the control group while group II served as the experimental group. To group II was assigned the practice of Kalaripayattu during 8 weeks, while group I was not allowed to participate in this practice

**Interpretation of Data**

The analysis of the data showed that there is a significant improvement in cardio-respiratory endurance, Explosive strength, agility and balance.

**Conclusion**

The regular practice of Kalaripayattu has a significant effect in improving the physical fitness of College students. The 8 weeks practice was too short to draw a definite conclusion concerning their psychological response.

**Recommendations**

On the basis of the observations and conclusions made from this study, the following recommendation can be made for educators and research scholars:

- A regular Kalaripayattu practice should be introduced as an essential element in education for the physical development of children
- It would be important to study the influence of kalaripayattu practice on adults psychological behavior over a practice period of atleast six months. It is expected

that this influence would be positive especially for adults.

- A similar study should be conducted on psychological behavior and physiological changes of adults.

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