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## Comparative effect of aerobic dance and folk dance on muscular strength

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### Abstract

The purpose of the study was to determine the comparative effect of Aerobic dance and folk dances training programmes on Muscular strength. Randomly selected 120 high school boys were divided into four equal groups as A, B, C and D. After taking the pre-test for Muscular strength the training programme was given to experimental groups A, B, and C where as the group D was a control group. The experimental group 'A' had undergone the training programme in Aerobic dance, group B had undergone the training programme in Kuthiyottam and group C in Kolkkali, thrice a week for 16 weeks. Two middle tests after 5 weeks and 10 weeks and a post test were conducted. To compare the significance of difference among the three experimental groups and the control group the analysis of covariance was employed. The Scheffe's post hoc test was applied wherever the F-value was found significant, in order to find the significance of difference among the paired adjusted post means. The level of significance chosen was 0.05. It was found that there was significant difference among all the four groups. It was shown that the Kolkkali group showed better improvement in performance than Aerobic dance, Kuthiyottam and Control groups. It was also revealed that Kuthiyottam group showed better improvement than Aerobic dance and control groups.

**Keywords:** Aerobic dance, folk dance, muscular strength, dances training programmes

### Introduction

Dance can be learned and enjoyed by all ages. Most dances are performed with musical accompaniment. Music and dance are integral parts of a culture and physical educators can provide meaningful physical activity and social development programmes by including more dance in the curriculum. Dance is an integral part of our profession as physical educators, and we should support dance education and dancing in all sectors of physical activity (Wall, Jennifer and Murray Nancy, 1989) [2].

Aerobic dance, when planned appropriately for individual participants can be very effective in building cardiovascular endurance and skeletal muscles effectively. Many children and adults have found this type of dancing and exercising amusing as it is accompanied by music. The main objective of dance aerobics, like many form of aerobics is to increase the maximum amount of oxygen that the body can process in a given amount of time. (Kaystoll, Sharon and Marie Beller, Jennifer, 1989) [4].

Kuthiyottam is a group dance which is performed in the Devi temples of Kerala. This dance demands a lot of physical effort and co-ordination of the body. Usually children take part in Kuthiyottam dance as an offering to the God and Goddess. Kuthiyottam is a form of dance which is performed in the Devi temples of Kerala. Two groups perform kuthiyottam during which one group sings kuthiyottam songs and other group performs kuthiyottam dance movements. This dance demands a lot of physical effort and co-ordination of body. It is performed in temples as a part of the temple festival. This dance is very famous in temples like Attukal, Chettikulnagara Devi temple and Kadakkal Devil temple. It is practiced and performed in many other Devi temples throughout the state of Kerala.

'Kolkkali' is one of the most popular rural dances. It is carried out by different religions and castes. So there is a lot of variation between their own traditional kolkkali and it is more popular among the Muslims. This magnificent art needs a lot of skill, practice and the correct body language to carry it out. This dance is supposed to have a link to 'kalaripayattu' as the experts of 'kalaripayattu' also teach 'kolkkali'. It has been found by historians that the modern 'kolkkali' is somehow related or connected to 'purakali'. There are many myths

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among the Hindus about the origin of 'kolkkali'. It is said that it was played for entertainment during the period of the Yadavas. Another myth says that Dronacharya the teacher of the Pandavas and Kauravas taught them this art form.

Muscular strength is defined as the amount of force a particular muscle group can apply in a single effort (Vivian, H. Hayward, 1991) [1]. Muscular strength is defined as the amount of muscular force, one is capable of exerting in a single muscular contraction (Hazeline, Rex, 1985) [3]. Muscular strength is important for smooth and easy performance of everyday activities, such as carrying groceries, lifting boxes and walking upstairs as well as for emergency situations. It has obvious importance in recreational activities.

To measure arm and shoulder girdle strength the test performer hangs from the bar using the overhand grip with his legs and arms fully extended. His feet should not touch the floor. He pulls himself upward in a metal or wooden bar approximately 1½ inches in diameter until his chin is over the bar and then lowers his body to a full hang position. He repeats the exercise as many times as possible. Only one trial is administered, unless it is obvious the performer can do better with a second attempt. The score is the number of completed pull-ups. The knees must not be flexed, and kicking motions, swinging, and snap-up motions are not permitted. The test administrator may prevent these actions by holding an extended arm across the front of the performer's thighs.

### Objective of the study

The purpose of the study was to find out the comparative effect of Aerobic dance, Kuthiyottam and Kolkkali training programmes on Muscular strength.

### Hypotheses

Based on the understanding of the literature and the nature

of the study the following hypotheses were developed.

1. There will be significant differences among Aerobic dance, Kuthiyottam and Kolkkali groups in the improvement of Muscular strength.
2. The Kolkkali group will show better improvement in Muscular strength than groups involved in Aerobic dance and Kuthiyottam training programmes.

### Design of the study

Randomly selected 120 high school boys were divided into four equal groups as A, B, C and D. After taking the pre-test for Muscular strength the training programme was given to experimental groups A, B, and C where as the group D was a control group. The experimental group 'A' had undergone the training programme in Aerobic dance, group B had undergone the training programme in Kuthiyottam and group C in Kolkkali, thrice a week for 16 weeks. Two middle tests after 5 weeks and 10 weeks and a post test were conducted. To compare the significance of difference among the three experimental groups and the control group the analysis of covariance was employed. The Scheffe's post hoc test was applied wherever the F-value was found significant, in order to find the significance of difference among the paired adjusted post means. The level of significance chosen was 0.05.

### Analysis of data and Discussion of Findings

To compare the significance of difference among the three experimental groups and the control group the analysis of covariance was employed. The Scheffe's post hoc test was applied wherever the F-value was found significant, in order to find the significance of difference among the paired adjusted post means. The level of significance chosen was 0.05.

**Table 1:** Analysis of Covariance on Muscular Strength among Experimental and Control Groups

	Aerobic Dance	Kuthiyottam	Kolkkali	Control group	SV	df	SS	MSS	F-value
Adjusted post test means	3.20	5.309	6.243	2.763	B	3	245.518	81.839	225.382*
					W	115	41.758	0.363	
* Significant at 0.05 level F 0.05 (3, 115) = 2.60									

The above statistical results shown in table 21 indicate that the F-value for the adjusted post test means was 225.382. As the obtained F-value was greater than the tabulated F-value (2.60) at 0.05 level of significance, significant difference

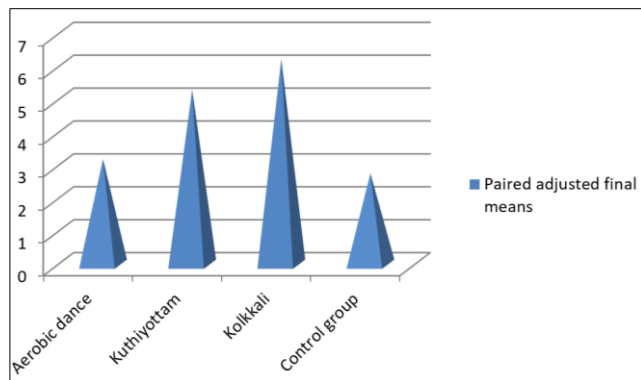
exists in the adjusted post test means among the experimental and control groups. The Scheffe's post hoc test was applied as significant difference existed and the results obtained are presented below.

**Table 2:** Scheffe's Test for Differences in Paired Adjusted Final Means among Experimental and Control Groups on Muscular Strength

Aerobic Dance	Kuthiyottam	Kolkkali	Control Group	Mean differences	Confidence Interval
3.20	5.309			2.109*	0.434
3.20		6.243		3.043*	0.434
3.20			2.763	0.437*	0.434
	5.309	6.243		0.935*	0.434
	5.309		2.763	2.546*	0.434
		6.243	2.763	3.481*	0.434
* Significant at 0.05 level					

The table indicates that the differences in paired adjusted final means between Aerobic dance and Kuthiyottam is 2.109 and the value 3.043 between Aerobic dance and Kolkkali, 0.935 between Kuthiyottam and Kolkkali, 2.546 between Kuthiyottam and Control group, 3.481 between Kolkkali and control group, 0.437 between Aerobic dance

and Control group, all of which were significant as the obtained values were greater than the confidence interval of 0.434 required for the significance at 0.05 level. The graphical representation of the paired adjusted final means of the experimental and control groups on muscular strength is shown in the following figure.



**Fig 1:** The paired adjusted final means of the experimental and control groups on muscular strength

### Conclusion

It was found that there was significant difference among all the four groups. It was shown that the Kolkkali group showed better improvement in performance than Aerobic dance, Kuthiyottam and Control groups. It was also revealed that Kuthiyottam group showed better improvement than Aerobic dance and control groups.

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