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MOVEMENTS, THOSE HAVE TOUCHED IN THE PAST, OR THOSE MAY TOUCH IN THE FUTURE ANY AFORESAID ASPECT(S) OF MAN, ARE PRIME BASIS AND SUPREME DYNAMICS OF INTRA-AND INTER-PERSONAL LIVING, LEARNING AND LANGUAGE.

- Dr. V.D. Bapat

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COMPARATIVE EFFECT OF BHARATHANATYAM AND ASANA ON THE FLEXIBILITY AMONG COLLEGE STUDENTS

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Abstract

To achieve the purpose of this study, 45 women students were selected as subjects and their age were between 18-22 years. They were assigned into three groups of which one group served as bharathanatyam group, second group served as yoga asana training group and the third group served as control group. The subjects were selected at random. The interventional training programmes for this study were six weeks bharathanatyam for experimental group I and six weeks yoga asana training for experimental group II and the control group was not given any training except of the routine. Data were collected on the flexibility of the subjects before and after the training course were period of six weeks. Statistical treatment used was Analysis of Covariance (ANCOVA). In all the cases, 0.05 level of confidence was fixed to test the significance, which was considered as appropriate. the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. Within the limitations and delimitations set for this study, it was concluded, that Bharathanaiyam group significantly improved the flexibility of the subjects. Yogasana training Group significantly improved in flexibility, and Bharathanatyam training significantly improved flexibility than yogasana training group. Control group did not show any significant improvement.

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Introduction

Dance is a unique form of movement; it is more than a mere physical movement, dance is aesthetic. Through dance, movement is transformed into a purposeful phrase of action that encompasses physicality. emotion, and cognition. Dance uses "the movement of the body in its reactions to the environment" (Vanleena, 1996). Dance education has been a part of the comprehensive school movement in the U.S. since the beginning of the twentieth century. Originally, dance was taught mainly as an activity within the physical education curriculum. Currently, it is recognized as an art form comparable to music, drama, and the visual arts. Both physical education and aesthetic education have embraced dance as a part of the curriculum (Yobu, 1984). Bharatanatyam is a very popular dance form in South India. It is oldest of all classical dance forms in India. Dance of mind & soul. It is extremely traditional and known for its grace, purity, tenderness, statuesque & sculptures poses. An embodiment of beauty, charm and gracefulness. Jessica (1998) states that's Ashtanga Vinyasa Yoga has a unique similarity and bond with Middle Eastern Dance Forms, especially Belly dance in that they both offer the practitioner a spiritual connection and can be thought of as moving meditation - moving from one asana (posture) to the next much like moving through the transitions from step to step of a dance performance.

Bhagavadgita (2002) states the general interpretation for the name is BHAva (expression) + RAga (music) + TAla (rhythm) + NATYAM (dance) = Bharatanatyam. Bharathanatyam and Yoga are the two ancient ways of living in India, which were contributions of India to the world. Iyengar (1997) Yoga is recognized world wide for its benefits, meditation and even for treatments and rehabilitation.

However, there are little researches in the field of Bharathanatyam. Trepman (1994) has mentioned about dance in Middle East offers this benefit as many dancers

feel a spiritual connection simply from the act of the dance itself. At Arabesque studio in Chicago we are offering a unique situation where Yoga and Dance come together complementing each other bringing Eastern spirituality and movement to the west. Majumdar (1950) stated that dance training has a positive effect on joint mobility and muscle flexibility in flexion-extension and lateral flexion of the spine in young crosscountry skier.

Robert (1999) stated that one with a strong core will be able to withstand the stresses of daily training better than with one without. Another area where dance and hath yoga meet is in the actual *sadhana* (practice), where there are many parallels between the two arts in both the technique and spirit (bhava) of the dance (www.yimag.com).

Pilates training focuses mainly on cultivating core strength in the body and lengthening the spine. Practiced for decades by dancers, Pilates has become popular in recent years for its largely aesthetic body sculpting effect of Pilates training can be a valuable tool for enhancing strength (Joseph, 2000). It is widely known that yoga is beneficial to all dancers for these reasons and many others such as: strength, posture improvement, improved circulation, and purifying the body from toxins. Jessica Aken (1998) and Carrico (1997) stated that one of the most precious gifts a yoga practice offers is a mind/body experience bringing clarity and peace to the mind.

Bodian (1993) states the benefits of Yoga for dancers are flexibility, strength muscle toning, stamina, improved hip mobility, flexibility, balance, posture improvement, stress relief, confidence, improved lung capacity, improved circulation, clarity of the mind, purification of the body.

Subjects and Methods

Experimental Subjects

To achieve the purpose of this study forty five women students from YMCA College of Physical

Education, Chennai, India were selected and their age were ranged between 18-22 years.

Experimental Design

The subjects were randomly assigned into three groups, namely bharathanatyam group - I, yoga group -II and control group. Each group consisted of fifteen subjects each. Independent variables were training on bharathanatyam and yoga asana for a period of six weeks.

Protocol

A pilot study was conducted before analyzing the training program to ensure the suitability, frequencies and duration of exercise. Further it helped to know the subjects capacity and the satisfactory effects. It also helped to know the difficulty of conducting training program and to set a clear understanding about the duration which was required for conducting the test. Reliability of instrument, subject's reliability, and tester reliability were taken. To determine the flexibility, sit and reach test was administered. For this purpose the Flexomeasure; case with yardstick and tape was used.

Ooutcome Measures

The interventional training programmes for this study were six weeks bharathanatyam for experimental group I; and, six weeks yoga asana training for experimental group II and the control group was not given any training except of their daily routine. The following bharathanatyam exercises were given to the bharathanatyam subjects: Fifth Nattdavu, Sixth Nattadavu, Seventh Nattadavu and Eighth Nattadavu. Asana like Paschimottanasana, Bhujangasana, Parivritta Trikonasana, Uttanasana, Halasana and Dhanurasana were given to *asana* group. Data were collected on the flexibility of the subjects before and after the training period of six weeks of bharathanatyam and yoga exercises.

The subjects were compared on the effect of bharathanatyam and yoga asanas on selected criterion variables among college women students. The differences between the initial and final scores were subjected to statistical treatment using Analysis of Covariance (ANCOVA) was used to find out the significant difference if any, between the groups on selected criterion variables separately. In all the cases, 0.05 level of confidence was fixed to test the significance, which was considered as appropriate.

Data Analysis & Statistics

Results on flexibility

The statistical analysis comparing the initial and final means of flexibility of the selected college women students due to practice of bharathanatyam and yoga asana is presented in Table-I.

Table-I

COMPUTATION OF ANALYSIS OF COVARIANCE OF FLEXIBILITY

(Scores in Centimeters)

	YOGA ASANA	BHARATHA-NATYAM	CONTROL	SOURCE OF VARIANCE	SUM OF SQUARES	df	SUM OF MEAN SQUARES	OBTAINED F RATIO
Pre Test Mean	27.15	29.28	28.44	Between	34.42	2	17.21	0.91
				Within	790.04	42	18.81	
Post Test Mean	29.81	33.60	28.67	Between	199.73	2	99.86	4.93*
				Within	851.24	42	20.27	
Adjusted Post Test Mean	30.92	32.63	28.53	Between	127.09	2	63.54	26.85*
				Within	97.04	41	237	
Mean Diff	2.65	4.32	0.23					

Table F-ratio at 0.05 level of confidence for 2 and 42 (df) =3.22, 2 and 26(df) =3.22. *Significant

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test (Table II). This proved that due to

six weeks yoga asana and bharathanatyam training, flexibility has been improved significantly.

The ordered adjusted means in Table II were presented through bar diagram for better understanding of the results of this study in Figure I.

Figure-I

BAR DIAGRAM ON ORDERED ADJUSTED MEANS OF FLEXIBILITY

(Scores in Centimeters)

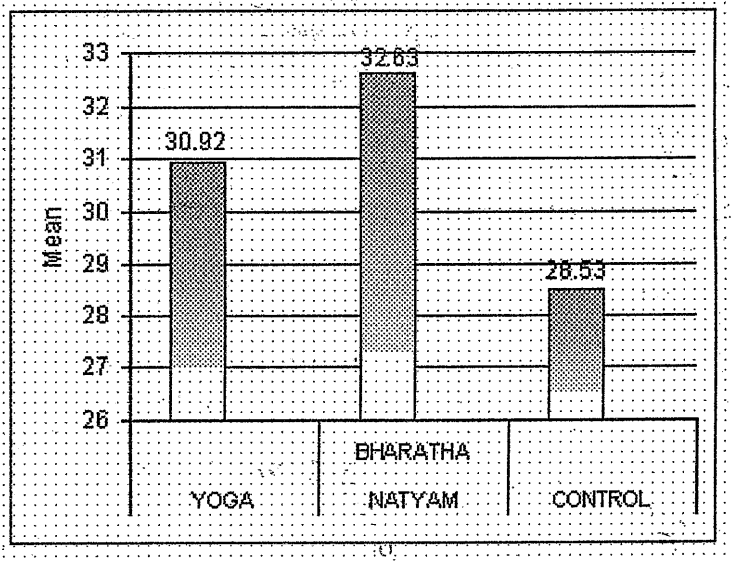

Table-II

SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON FLEXIBILITY

(Scores in Centimeters)

MEANS			Mean Difference	Required .Confidence Interval
Yoga asana Group	Bharathanatyam Group	Control Group		
	32.63	28.53	4.11*	1.45
30.92		28.53	2.39*	1.45
30.92	32.63		1.72*	1.45

*Significant

Discussion on the Findings of Flexibility

As shown in Table I, the obtained F value on the scores of pre test means 0.91 was less the required F value, which proved that the random assignment of the subjects were successful and their scores in flexibility before the training were equal and there was no significant differences.

The effect of Yoga asana and Bharathanatyam training on the groups among post test scores showed F value of 4.93, which was significant at 0.05 levels. This proved that there was a significant difference between the groups due to Yoga asana and Bharathanatyam training on the college women.

Taking into consideration of the pre test means and post test means adjusted post test means were determined and analysis of covariance was done and the obtained F value 26.85 was greater than the required value of 3.22 and hence it was accepted that the yoga asana and .bharathanatyam training improved flexibility of the subjects.

The post hoc analysis of obtained ordered adjusted means Table II proved that there was a significant differences existed between control group, Yoga asana and Bharathanatyam group

Discussion on Findings of Flexibility

The investigator was interested to find out the effect of Yoga asana and Bharathanatyam on flexibility of the college students.

The results presented through Tables I proved that the group's random assignment was success as the obtained F value on Pre test scores were less than required table value. The post test analysis proved a significant F value of 4.93 which was greater than the required value of 3.22 to be significant at 0.50 levels which is supported by study conducted by Bodian (1993). Hence, it was accepted that there existed significant differences between the groups due to Yogasanas and Bharathanatyam training on post test

scores.

Since significant differences were recorded, the obtained data was further subjected to statistical treatment using Scheffe's Confidential Interval. The results presented in Table II proved that there was significant difference between control group & Yogasana group, & control group and Bharathanatyam group and Yogasana & Bharathanatyam group. This proved that six weeks Yogasana training significantly improved flexibility of the college students. Six weeks of Bharathanatyam improved flexibility of the subjects. This study is supported by the study conducted by Jan Percival (2002) states that many forms of exercise and Yogasana effectively stretches, strengthens and improves the flexibility of the various joints of the body along with the muscle tone and regulating the endocrine system.

When comparing between the two experimental groups, it was found that Bharathanatyam group was significantly better in improving flexibility of the subjects than Yogasana.It was hypothesized that there would be significant improvement due to six weeks Bharathanatyam and Yoga asana training on the college students. The results presented in Table I proved that there was significant differences existed between the groups due to six weeks training and was significant at 0.05 level as the obtained F value was greater than the required value. Hence, the first hypothesis of this research was accepted. It was also hypothesized that the Bharathanatyam would be better than yoga asana in improving flexibility among college students. The post hoc analysis using Scheffe's Confidence interval, as presented in Table II, proved that there was a significant difference between Yoga asana and Bharathanatyam groups, as the obtained mean difference was greater than the required value to be significant. The Bharathanatyam group gained adjusted mean value of 32.63 and Yogasana group gained adjusted mean value of 30.92 with mean difference of 1.72. The required value to be significant was

1.43. Hence, it was accepted that there was significant differences between Bharathanatyam group and Yogasana groups and the Bharathanatyam group was significantly better than Yoga asana group in improving flexibility of the college students. Thus, the second hypothesis was accepted at 0.05 level.

Within the limitations and delimitations set for this study, the following conclusions are drawn: Bharathanatyam significantly improved the flexibility of the subjects. Yogasana training for six weeks significantly improved flexibility of subjects. Bharathanatyam training significantly improved flexibility than Yogasana and Control group did not show any significant improvement.

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