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IMPACT OF ASTANGA YOGA AND KAYAKALPA PRACTICES ON SELECTED PHYSIOLOGICAL VARIABLE AMONG MALE GERIATRIC PEOPLE

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ABSTRACT

Yoga is a part of Indian culture and Religion. People believed the origin of yoga was Ancient India. Between 4000 B.C. and 2000 B.C. artifacts of Indus Valley Civilization showed figures in seated, cross-legged poses, and symbols later associated with yoga. The study was undertaken with the aim to observe the impact of astanga yoga and kayakalpa practices on selected physiological variable among male geriatric people. For this study totally 45 male geriatric people were selected as subjects from Adampakkam Manavalakalai Mandram, Chennai. Their age ranged between 60 to 70 years. They were divided in to three groups. Experimental group I –astanga yoga with kayakalpa practices, Experimental group II- astanga yoga without kayakalpa practices and group III –control group (no intervention). The data was collected from three groups prior to training and after 6 weeks of astanga yoga with and without kayakalpa practices. Analysis of covariance was used to find out the significant difference between the three groups. The level of significance at 0.05%. The results proved that the regular astanga yoga and kayakalpa practices helped to significantly reduce the physiological variable in diastolic blood pressure.

Keywords: Astanga Yoga, Kayakalpa Practices, Diastolic Blood Pressure

1. INTRODUCTION

Yoga is one of the six orthodox systems of Indian philosophy. Yoga is the union of the jivatma with the paramathma. It was collated, coordinated and systematized by Patanjali in his classical work, the Yoga Sutras, which consists of 195 terse aphorisms in which it is stated that yoga is a state where all activities of the mind are channelized in one direction; or the mind is free from distractions. The word Yoga is derived from the Sanskrit root Yuj meaning to bind, to unite, join, and attach and yoke, to direct and concentrate one's attention on, to use and apply. It also means union or communion. It means the disciplining of the mind, intellect, the emotions, the will, which that yoga presupposes; it means a poise of the soul which enables one to look at life in all its aspects evenly.

Yoga is not merely doing an asana by the body, through the body, and for the body. The sadhakas learns to unite one part of the body with another part of the body, the body with the mind, the body with the breaths and senses, also the breath with the mind and senses and this takes one to the self-realization path. It is this unification which justifies the definition of the word yoga which means, 'to unite (Iyengar, 2006).

All the masses are made up of fundamental particles and the fundamental particles got originated from the space. Knowledge about the particles and masses is science and the knowledge about the space and its transformation is spirituality. Combination of science and spirituality is science of divinity – Yoga. In one of his poetries Vethathiri Maharishi clarifies, "The Universe minus cosmic bodies is the dense darkness (Pure space – in spirituality) which in science is called Gravity". Mind has the capacity to shrink to the particle level and expand to the level of Universe. Yoga is the means to attain this super quality. Scientists pioneering in various fields including evolutionists, geneticists, and gerontologist have dedicated their life's works trying to decode the process of ageing and why it happens, but even today we only have theories (Medvedev, 1990). There is no consensus among the theorists for why we age, but some of them have gathered empirical evidence over others, of which two theories have gained traction over time. These are *damage theory of ageing*, which postulates that ageing is caused due to accumulation of damages at a cellular level over time, and the *programmed theory of ageing*, which supports that ageing is predetermined and happens when it is triggered by the genetics of organism. While the reason why a person ages might still be a mystery, the fact remains that everything that comes into existence deteriorates over time and perishes. Death is inevitable and so is the phenomenon of growing old. The scientific study of old age and the process of growing old is called Gerontology and the care of old people, is a separate branch of medicine, is called Geriatrics. Old age is popularly identified by how advanced a person is in terms of chronological age. Even as early as 1875, the Friendly Societies Act of Britain defined 'old age' as being 'any age after 50', for paying out pension to the elderly. (Macinol, 1998). But in the recent past, population researchers have revisited the definition and have introduced various other criterions for measuring old age. These include life expectancy(or how much longer does the person expect to live), cognitive function, physical capability, and disability, approaching ageing from a multi- dimensional angle (Sanderson, 2013).What construes as old age has also changed throughout history; in 1840, the highest life expectancy among women was found in Sweden at an average of 45 years of age. (Smith, 2007) Today, the highest life expectancy is found among the Japanese, who on an average live for 83.7 years (Global Health Observatory Data Repository, 2016). This drastic rise in life expectancy and therefore what construes as 'old age' has been possible because of the advancement in medicine and surgery, and improvement in standard of living. In India, as per the 2011 Census, the number of persons above the age of 60 is a whopping 10.38 crores.

2. PURPOSE OF THE STUDY

The present study was designed to find out the impact of astanga yoga and kayakalpa practices on selected physiological variable among male geriatric people.

3. HYPOTHESIS

1. It was hypothesized that there would be significant differences on selected physiological variable in diastolic blood pressure among Male geriatric people due to astanga yoga with and without kayakalpa practices groups than the control group.
2. It was hypothesized that there would be significant differences on selected physiological variable in diastolic blood pressure among Male geriatric people due to astanga yoga with kayakalpa practices group than the astanga yoga without kayakalpa practices group.

4. METHODOLOGY

For the purpose of the study, 45 Male geriatric people from Chennai aged between 60 to 70 years were selected. They were equally divided into three groups: experimental group I (astanga yoga with kayakalpa practices), Experimental group II (astanga yoga without kayakalpa practices) and control group (no intervention).

The experimental group I was involved in astanga yoga with kayakalpa practices for the duration of six weeks, experimental group II was involved astanga yoga without kayakalpa practices. The control group was in active rest during the period of the study. This study employed the experimental random group design, with astanga yoga with and without kayakalpa practices as the independent variable and diastolic blood pressure as the dependent variable.

Astanga yoga such as prayer, loosening exercises, Suryanamaskar, Asanas, Pranayama, meditation and relaxation were given to the experimental groups for the period of six weeks. The training scheduling comprises of six days per week for the maximum of one hour for six weeks. The data were collected before training as pre-test from three groups. After six weeks of astanga yoga with kayakalpa practices, data were again collected from all the experimental groups and control group. The equipment used to measure the level of diastolic blood pressure through citizen equipment. Analysis of

covariance (ANCOVA) was used to find out the significant differences among the groups. The level of significance was fixed at 0.05%.

5. RESULT AND DISCUSSION

Diastolic blood pressure was measured through citizen equipment, The pre and posttest means of the experimental groups and control group statistically analyzed to find out the significance of Table.

Table - I

COMPUTATION OF ANALYSIS OF COVARIANCE OF THE TWO EXPERIMENTAL GROUPS AND CONTROL GROUP ON DIASTOLIC BLOOD PRESSURE

(Scores in mmHg)

Test	Exp. Gr. I	Exp. Gr. II	Cont. Group	Source of variance	Sum of squares	Degree of free dom	Means squares	Obtained F value
PRE TEST	93.4	93.07	92.67	B	4.04	2	2.022	0.56
				W	151.87	42	3.62	
POST TEST	89	90.40	92.73	B	106.71	2	53.36	6.78*
				W	330.53	42	7.87	
ADJUSTED POST TEST	89.02	90.40	92.71	B	101.92	2	50.96	6.33*
				W	330.140	41	8.05	
MEAN GAIN	4.4	2.67	0.07					

* $F_{(0.05)}$ (2,42 and 2, 41) = 3.23. *Significant at 0.05 level of confidence.

The table shows that the pretest mean scores of diastolic blood pressure on astanga yoga with and without kayakalpa practices groups and control group were 98.4, 93.07, 92.67 respectively and the obtained 'f' value on pre test scores 0.56 was less than the required table value 3.23 to be significant at 0.05 level. This proved that there was no significant difference among the groups at initial stage and the randomized assignment of the subjects into three groups were successful

The post-test mean scores of astanga yoga with and without kayakalpa practices groups and control group were recorded as 89, 90.40, and 92.73 respectively, showed improvement over the pre test scores. The obtained f value on post test scores 6.78 was greater than the required table value 3.23 with df 2 and 42 . This proved that there was significant difference among the post-test means of the subjects.

The adjusted post-test mean scores of astanga yoga with and without kayakalpa practices groups and control group were recorded as 89.02, and 90.40 and 92.71 respectively. The obtained f value of 6.33 of adjusted post test means was greater than the required table required table value 3.22. This proved that there was significant difference among the means due to six weeks training on astanga yoga with and without kayakalpa practices on physiological variable of diastolic blood pressure .

Since significant improvements were recorded, the results were subjected to post hoc analysis using scheffe's confidence interval test. The results were presented in table

Table II

SCHEFFE'S POST-HOC TEST FOR DIASTOLIC BLOOD PRESSURE

Exp. Gr. I	Exp. Gr. II	Control group	Mean difference	C.I
89.02	90.40	-	1.38	2.58
89.02	-	92.71	3.70*	2.58
-	90.40	92.71	2.31*	2.58

*significant

6. DISCUSSION ON THE FINDINGS OF DIASTOLIC BLOOD PRESSURE

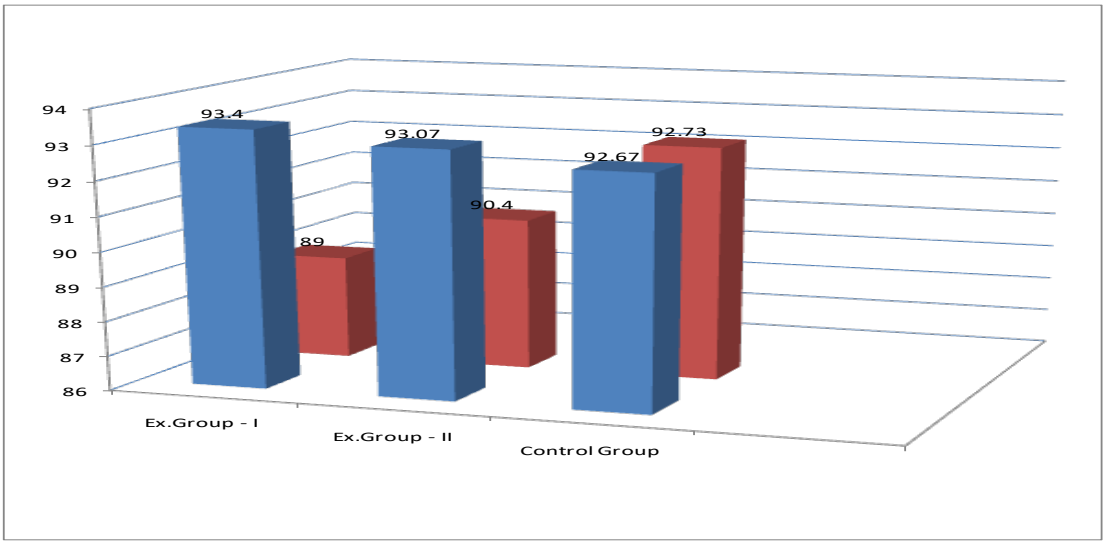
The Table shows that Scheffe's confidence interval values of diastolic blood pressure of astanga yoga with and without kayakalpa practices groups and control group of Male geriatric people.

Table shows that the adjusted post-test mean difference in diastolic blood pressure between EX.GR-I (astanga yoga with kayakalpa practices) and control group and between EX.GR-II (astanga yoga without kayakalpa practices) and control group are 89.02, 90.40, and 92.71, respectively, which were statistically significant at 0.05 level of confidence. At the same time there was significant difference on diastolic blood pressure between the EX.GR-I (astanga yoga with kayakalpa practices) and EX.GR-II (astanga yoga without kayakalpa practices).

The findings of the study on diastolic blood pressure reveal that the experimental groups namely EX.GR-I (astanga yoga with kayakalpa practices) and EX.GR-II (astanga yoga without kayakalpa practices) had significantly improved after the training. Besides, the results of the study indicated that there was significant difference between the EX.GR-I (astanga yoga with kayakalpa practices) and EX.GR-II (astanga yoga without kayakalpa practices).

Figure – 1

Bar diagram showing the mean difference among Experimental Group I, Experimental Group II and Control Group of Diastolic Blood Pressure (Scores in mmHg)



7. DISCUSSION ON HYPOTHESIS

1 . The first hypothesis results shows that the calculated 'F' value is greater than the table value on the physiological variable among Male geriatric people for post test scores as diastolic blood pressure is decreased. This proves that there was significant difference between the experimental groups and control group. Hence the first hypothesis was accepted at 0.05 level of significance.

2. The second hypothesis results proved that the post mean differences between experimental group I , experimental group II, and control group III were found to be greater than the Scheffe's common interval on the selected physiological variable as diastolic blood pressure is decreased. This proves that there was significant difference between the experimental group I and experimental group II. Hence the second hypothesis was accepted at 0.05 level of confidence.

8. CONCLUSION

The six-weeks of astanga yoga and kayakalpa practices significantly reduced the physiological variable in diastolic blood pressure in the post test data of experimental groups, compared to the control group. The post hoc analysis of the results proved that the astanga yoga with kayakalpa practices (experimental group I) was effective than the astanga yoga without kayakalpa practices (experimental group II) among Male geriatric people.

CONFLICT OF INTERESTS

None

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None

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