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A WAY TO CONTROL BLOOD PRESSURE: YOGA AND PRANAYAMA

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Keywords:
Diastolic Blood Pressure, Systolic Blood Pressure, Pranayama, Asanas, Physiological variables

Abstract
Advent of the great Indus Valley Civilization in the Indian sub-continent saw the emergence of various social and scientific disciplines that aimed to improve the quality of human life. Amongst the diverse range of practices that originated centuries ago, Yogic practice is one such tradition that remains an integral part of our lives to this very day. Through cyclical adaptations in yogic traditions carried out by famous scholars over the course of time, modern day yoga has now become an integral part of our physical, mental and social well being. In recent years, impact on yoga on physical and mental health of human beings has been closely studied leading to breakthroughs in modern day preventative health. This research focused on one such aspect where the impact of yogic exercises on blood pressure of females between the age group 26 to 40 years was studied. A group of 50 women were subjected to yogic exercises and pranayama routine for six months marked by two tests of blood pressure measurements before and after the six months yogic regimen. A significant change in the blood pressure was observed for all females falling within the test group of females after following a closely monitored yogic exercise regimen.

INTRODUCTION

The secular thought of understanding the world around us and embracing the change on physical and mental echelons has been an essential part of human evolution. This idea of self improvement was finally manifested in a discipline that was formed by scholars of the Indus valley civilization in the northern regions of the Indian sub-continent. Yoga was the name given to this practice of self discovery and was later mentioned in possibly one of the earliest written texts by human beings, the Rig Vega. Scholars would develop a multitude of studies and techniques that would aim at improving the life of human beings. A collection of texts that would describe mental and physical exercises that if performed by human beings on a regular basis, will certainly improve their well being and provide immense physical agility and expand mental prowess. These texts would cover hundreds of physical exercises and thousands of lessons on human beings that would set guide lines to further their aspirations and ambitions. This belief system was further elaborated and expanded by scholars appearing in later centuries where different yogic exercises and breathing techniques were further developed. This collection of texts describing exercises aimed at improving the quality of life via means of spiritual, physical and mental growth took form as modern day yoga. Researchers have now recognized the benefits of yogic exercises and have began to quantify the benefits of a yogic life by studying the physiological changes associated with them. This study focuses on studying the changes in blood pressure levels of adult females between the age group of 26 to 40 years. A group of 50 females were subjected to a strict regimen of yogic exercises and pranayama under the supervision of a trained instructor for six months. This group of 50 females was divided into two sub groups where one group remained a control group and the other group comprised of females who partook yogic exercises and pranayama. Blood pressure levels of both groups were measured before and after the commencement of yogic training schedule.

Objective of the study
To study the effect of yoga and pranayama on blood pressure of women of the age group of 26-40 years..

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MATERIALS & METHODS

The present study was organized to know the effect of yogic exercise and pranayama on the females of 26-40 age group. The study was conducted at Panipat district in Haryana state. The study was conducted for the period of six months six days in a week for 90 minutes.

The sample of the study selected of 50 females age group of 26-40 years. The subjects were further divided into two groups. Experimental group and control group. Experimental group containing 25 subjects and control group containing 25 subjects. The selected sample of experimental group go through the training for six months under the direct supervision of yoga expert and researcher.The intervention consisted of vajarasana, makar asana, padam asana, sukhasana, tadasana, Trikonasana, Bhujang asana, Manduka asana, Variksasana, Shavasana and pranayama Ujjjai pranayama, sheetali sheetkari, kapalbhati , anulom-vilom and bharamari pranayama which were performed early in the morning from 6.00 to 7.30 am daily at the Panipat. The subjects of the experimental group were given training of six days in a week (mon- sat) for duration of 90 minutes each day. The experimental group was given instruction and demonstration in the training program. It was assured that the subjects of experimental group strictly follow the instruction and training schedule. The subjects of control group were engaged in light exercises and lead up games.

RESULT & DISCUSSION

Table-1 comparison of pre test and post test of age group of 26-40 control group on Systolic blood pressure

Sources	N	Mean	S.D.	t-ratio
Pre test	25	120.48	5.72	-1.81
Post test	25	110.44	27.96	

Significant at.01 level of confidence.

Table-1 shows the t-ratio, S.D. and mean score of pre and post test of experimental group, age group of 26-40 on systolic blood pressure. The t- ratio -1.81 was not significant. There was no significant difference between the pre test (120.48) mean value and post test (110.44) mean value of systolic blood pressure. So the no effect of yogic asanas on the systolic blood pressure of age group of 26-40 of experimental group of females.

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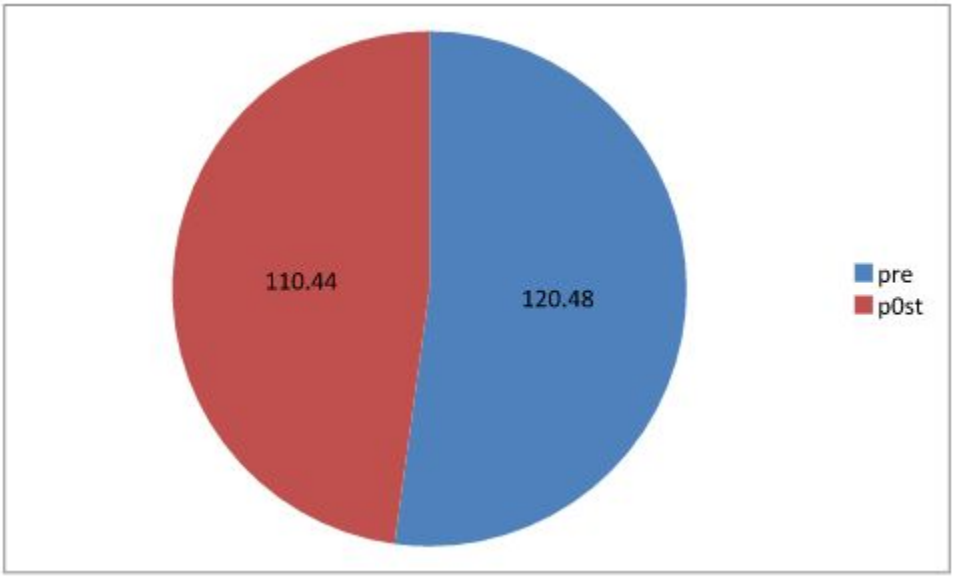

Fig-1 Mean of pre test and post test of control group of 26-40 ages on Systolic blood pressure

Table-2 comparison of pre test and post test of age group of 26-40 control group on Diastolic

Sources	N	Mean	S.D.	t-ratio
Pre test	25	74.28	5.84	-13.88
Post test	25	72.24	5.50	

Significant at.01 level of confidence.

Table-2.shows the t-ratio, S.D. and mean score of pre and post test of experimental group, age group of 26-40 on diastolic blood pressure. The t- ratio -13.88 was significant at .01 level of confidence. There was significant difference between the pre test (74.28) mean value and post test (72.24) mean value of diastolic blood pressure. So the positive effect of the yogic asanas h on the diastolic blood pressure of age group of 26-40 of experimental group.

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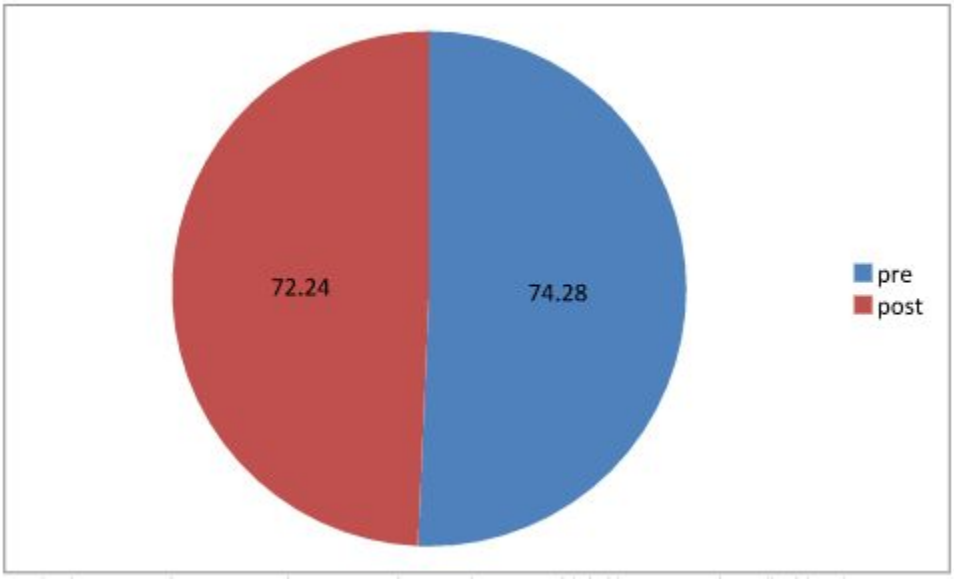

Fig-2. Mean of pre test and post test of control group of 26-40 age on Diastolic blood pressure

Table-3 comparison of pre test and post test of age group of 26-40 experimental group on Systolic blood pressure.

Sources	N	Mean	S.D.	t-ratio
Pre test	25	120.40	6.25	-12.77
Post test	25	113.88	5.62	

Significant at.01 level of confidence.

Table-3 shows the t-ratio, S.D. and mean score of pre and post test of experimental group, age group of 26-40 on Systolic blood pressure. The t- ratio -12.77 was significant at .01 level of confidence. There was significant difference between the pre test (120.40) mean value and post test (113.88) mean value of systolic. So the yogic asanas have effect on the systolic age group of 26-40 of experimental group of females.

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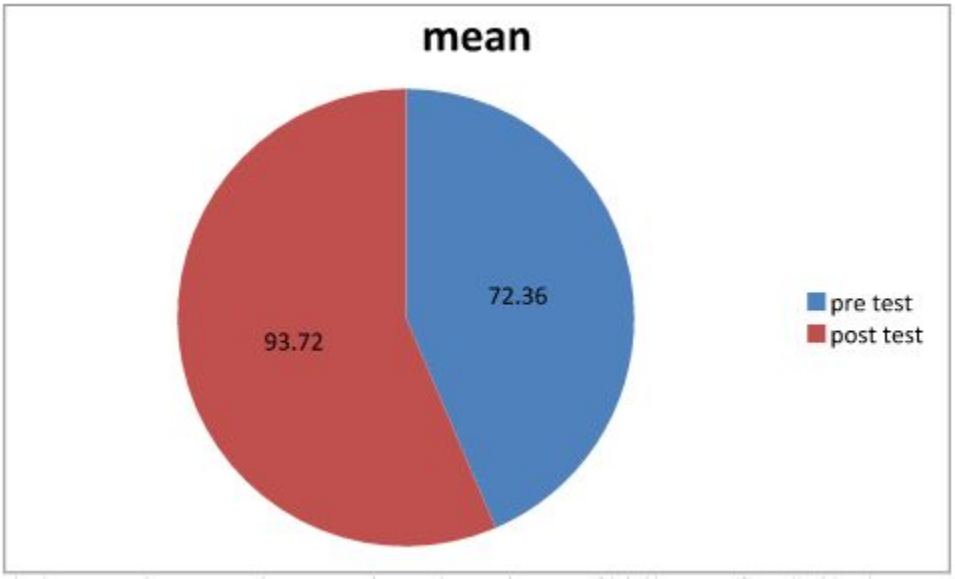

Fig-3: Mean of pre test and post test of Experimental group of 26-40 age on Systolic blood pressure

Table-4 comparison of pre test and post test of age group of 26-40 experimental group on Diastolic

Sources	N	Mean	S.D.	t-ratio
Pre test	25	72.36	5.25	0.78
Post test	25	93.72	136.97	

Significant at.01 level of confidence.

Table-4 shows the t-ratio, S.D. and mean score of pre and post test of experimental group, age group of 26-40 on diastolic blood pressure. The t- ratio 0.78 was not significant. There was no significant difference between the pre test (167.64) mean value and post test (93.72) mean value of Diastolic blood pressure. So the yogic asanas have no effect on the diastolic blood pressure of age group of 26-40 of experimental group of female.

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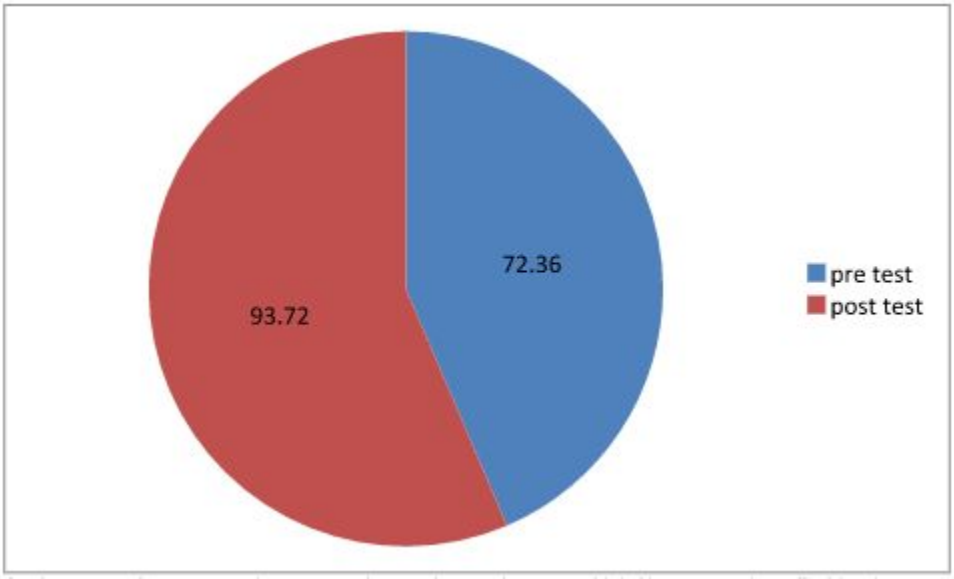

Fig-4: Mean of pre test and post test of Experimental group of 26-40 age on Diastolic blood pressure

CONCLUSION

There is an immense difference in the blood pressure levels of the females of test group over the span of six months. The control group comprising of 25 females underwent basic warm up, general exercises and engaged in lead up games whereas the test group underwent 10 different yogic exercises and 6 pranayamas for six months. Table 1 indicates no significant change in blood pressure levels of females of control group between the ages of 25 and 40 years. Separate data entries were recorded for systolic and diastolic blood pressure. The't' ratio supports this argument as it did not reach the 01 significant level of confidence. The mean value of systolic blood pressure in pre tests (120.48) and post tests (110.44) did not bear any significant value and similar trend was observed for diastolic blood pressure for pre tests (74.28) and post tests (72.24). This lead to the conclusion that general exercises had minimal effect on the blood pressure of female control subjects between the years 25 – 40.

The results described in table 3 and 4 are associated with blood pressure levels of females of age group 25- 40 years falling within test group that undertook yogic exercises and pranayama for six months. The results shows in table 3 describe the mean values of systolic blood pressure of test group females and indicate a noticeable difference in pre test (120.44) and post test (113.88) values. This leads to 't' ratio holding a significant value and supporting a positive significant change in systolic blood pressure of females. Table 4 also follows a similar pattern where diastolic blood pressure of test group females was looked at. The mean values of diastolic blood pressure of pre tests (72.36) and post tests (93.72) showed a positive significant change and 't' value held significant number at 0.1 stating diastolic blood pressure had a positive significant effect pre and post yogic exercises.

This research indicates that there is a significant change in the blood pressure of females of age group 25 – 40 years who underwent yogic exercises and pranayama for six months. Both systolic and diastolic blood pressure levels saw a significant change in pre to post tests of females in test group.

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