

# IMPACT OF A STRUCTURED YOGIC TRAINING PROGRAM ON BLOOD PRESSURE OF UNIVERSITY STUDENTS: A QUASI-EXPERIMENTAL STUDY

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DOI: 10.47750/pnr.2022.13.S06.058

## Abstract

**Objective:** To investigate the impact of a structured yogic training program on the blood pressure of Manipur University students using a quasi-experimental design.

**Design and method:** A total of fifty female subjects were purposively selected from the students of Manipur University, whose ages ranged from 21-25 years. It was hypothesized that structured yogic training may have a significant effect on the blood pressure of the subjects. The training was regularly practiced for one hour, five days a week for nine weeks. The data were collected by using a sphygmomanometer. For statistical analysis, descriptive analysis and paired sample t-test were employed to see the characteristic of data and mean differences between the pre-test and post-test respectively.

**Results:** The Mean and Standard Deviation of Systolic Blood Pressure for the pre-test and post-test were  $119.34 \pm 14.41$  and  $122.14 \pm 13.94$  respectively. The Mean and Standard Deviation of Diastolic Blood Pressure for the pre-test and post-test were  $79.90 \pm 18.79$  and  $79.42 \pm 8.86$  respectively. The value of the range, standard error, and variance of systolic blood pressure for the pre-test and post-test were 67, 2.03 & 207.78, and 55, 1.97 & 194.49 respectively. The value of the range, standard error, and variance of Diastolic Blood Pressure for the pre-test and post-test were 130, 2.65 & 353.23, and 37, 1.25 & 78.61 respectively. The insignificance was found in the p-value while comparing the mean for Systolic Blood Pressure between the pre-test and post-test. The calculated 't' value was 1.41 which is lesser than the tabulated 't' which was 1.699, with 29 degrees of freedom at a 0.05 level of confidence. An insignificant difference was also found between the pre-test and post-test mean comparison of the systolic blood pressure, and the p-value is 0.16, ( $p > 0.05$ ). There was an insignificant difference in systolic blood pressure after nine weeks of yogic training compared to baseline data. The insignificance was found in the p-value while comparing the mean for the diastolic blood pressure between the pre-test and post-test. The calculated 't' value was 0.20 which is lesser than the tabulated 't' which was 1.69, with 29 degrees of freedom at a 0.05 level of confidence. An insignificant difference was also found between the pre-test and post-test mean comparison of the diastolic blood pressure, and the p-value is 0.84, ( $p > 0.05$ ). There was an insignificant difference in diastolic blood pressure after nine weeks of yogic training compared to baseline data. Thus, regular practice of yogic training results in insignificance although it helps to maintain the blood pressure at the normal range.

**Conclusion:** The study concluded that an insignificant difference between the pre-test and post-test was found. So, an insignificant increase was detected in systolic blood pressure, and a reduction was detected in diastolic blood pressure but within the normal range of blood pressure among students of Manipur University. Thus, the alternative hypothesis of the study is rejected and the null hypothesis is accepted. Regular yogic training help to maintain the blood pressure of the body, which can help to reduce the risk of hypotension, heart attack or stroke, or other complications. This study would help our brain and heart, receive nutrients and oxygen through our blood flow and also help to improve the overall health of the subject.

**Keywords:** University students, Mean, Standard Deviation, Blood Pressure, and Yogic training.

## INTRODUCTION

Heart failure is one of the major health problems all over the world. The prevalence of heart failure in India is due to coronary artery diseases, hypertension, obesity, diabetes, and rheumatic heart diseases ranging from 1.3 to 4.6 million. Heart failure is associated with altered autonomic function. The present study suggests that Yoga can help to maintain Systolic Blood Pressure (SBP) and Diastolic Blood Pressure (DBP) and improve a person's quality of life. Normal blood pressure is vital to our life. Without the pressure that forces our blood to flow around the circulatory system, no oxygen or nutrients would deliver through our arteries to the tissues and organs. However, blood pressure can become dangerously high, and it can also get too low. It is the force of blood against the wall of arteries. It records two numbers, the systolic pressure (the pressure when the heart beats) over the diastolic pressure (the pressure when the heart relaxes between the beats). According to the World Health Organization (WHO) and International Society of Hypertension (ISH), Blood Pressure of 120/80 mmHg is defined as normal, 130-139/85-89 mmHg as high-normal and 140/90 mmHg and above as high Blood Pressure.

## YOGA

Maharishi Patanjali defines in his second aphorism "yogah citta vrtti nirodhah," meaning 'Yoga is a process of gaining control over the mind by cessation of the modifications of the mind.' (Chidananda, M. B. T., 2010, p.6). Many scientists, doctors, psychologists, etc. all over the world are extensively studying the beneficial aspect of yoga which give us encouraging results of positive health through yoga (Clarke, H. H., and Ravishankar, N. S., 2009, p.13).

## Blood Pressure (BP)

Blood Pressure is the pressure exerted by the blood upon the walls of the blood vessels and especially arteries and varies with the muscular efficiency of the heart, the blood volume and viscosity, the age and health of the individual, and the state of the vascular wall.

The researchers felt the need of the hour to research blood pressure among Manipur University students. Therefore, the researchers compared the pre-test and post-test results of yogic training to the fifty female students of Manipur University, Canchipur, Manipur, India.

## OBJECTIVE

Keeping in view the researchers' interest, the main objective of this study was to find out the impact of a structured yogic training program on the blood pressure of Manipur University students using the quasi-experimental design.

## HYPOTHESES

Based on the review of related literature, discussion with the experts, and researchers' personal experience, the following hypotheses were formulated:

HA: There might be a significant difference between pre-test and post-test on the systolic blood pressure of Manipur University students after yogic training.

HA: There might be a significant difference between the pre-test and post-test on the diastolic blood pressure of Manipur University students after yogic training.

HA: There might be a significant effect of yogic training on the systolic blood pressure between pre-test and post-test of Manipur University students.

HA: There might be a significant effect of yogic training on the diastolic blood pressure between pre-test and post-test of Manipur University students.

## SIGNIFICANCE OF THE STUDY

The present study will contribute significantly in the following areas:

1. The present study will be beneficial to yoga practitioners, physical educationists, trainers, players, and coaches, to enhance their physical performance.
2. The present study will serve as a foundation for future research in yoga.
3. The findings of the present study will be helpful to the students to know their actual ranges of systolic blood pressure and diastolic blood pressure.
4. This study will help the players achieve their high performance at the time of competition by maintaining the desired normal range of blood pressure.
5. The present study will help suggest a developmental program for yogic practitioners in a better way in different conditions.

## METHODOLOGY OF THE STUDY

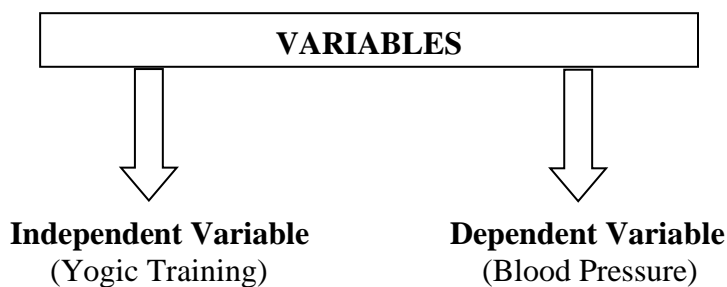
Researchers used the action research design to determine the impact of a structured yogic training program on the Blood Pressure of Manipur University students by using a quasi-experimental study.

### SELECTION OF SUBJECTS

For this present study, a total of 50 (fifty) female students from different departments of Manipur University, Canchipur, Manipur, India, whose ages ranged from 21 to 25 years, were selected.

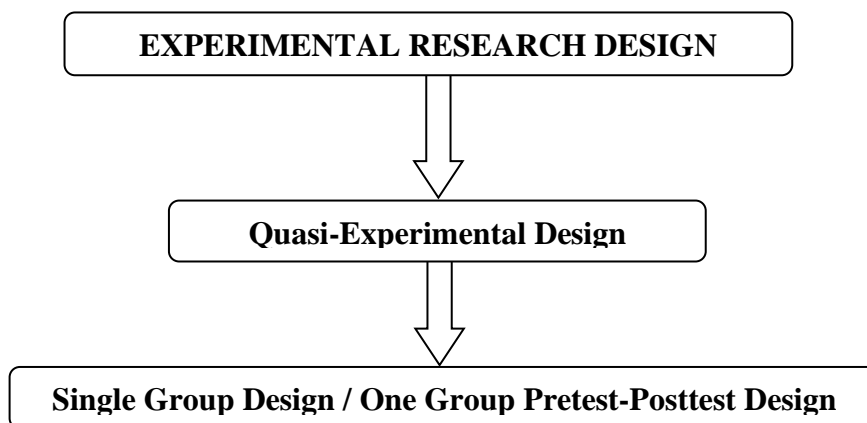
### SELECTION OF VARIABLES

For the present study, the researchers used structured yogic training as an independent variable. The systolic blood pressure, and diastolic blood pressure as dependent variables, to see the cause and effect by observing and measuring.



## EXPERIMENTAL RESEARCH DESIGN

For this present study, the researchers used single group design, also called one group pretest-posttest design of quasi-experimental design of experimental research design. In this single group design/one group pretest-posttest design, the researchers measure the same dependent variable in one group of sub-subjects or (the pre-test), and after (the post-test) of treatment, i.e., the independent variable (yogic training) was administered.



#### ETHICAL APPROVAL

The study was approved by the Institutional Human Ethics Committee of Manipur University, Canchipur, Imphal, Manipur (India) with Ref. No. MU/IHEC/2020/025 and subject informed consent were obtained from the subject participants.

#### TRAINING PROGRAM

The detailed yogic training program is given below in table 1.

Table 1: Yogic Training Program

Sl. No.	DAYS	TIME	REPETITION	YOGIC EXERCISES
1.	Monday	5	1	Om Chanting
		10	1	Selected Yogic Suksham and Sthula Vyayam
		5	1	Quick Relaxation Technique (QRT)
		15	2	ASANAS Tadasana, Utkasana, Garudasana, Bhujangasana, Salabhasana, and Viparitamkarni
		5	1	QRT
		15	3	PRANAYAMA Nadi Sudhi, Nadi Shodhana, Ujjayi, Bhramari, Sitali and Sitkari
		5	1	Gayatri Mantra (Om Bhur Bhuva Swaha)
2.	Tuesday	5	1	Om Chanting
		10	1	Selected Yogic Suksham and Sthula Vyayam
		5	1	QRT
		15	2	ASANAS Ardhakati Chakrasana, Trikonasana, Vakrasana, Pavanamuktasana, and Naukasana
		5	1	QRT
		15	3	PRANAYAMA Suryanuloma Viloma, Ujjayi, Bhramari, Sitali and Sitkari
		5	1	Gayatri Mantra (Om Bhur Bhuva Swaha)
3.	Wednesday	5	1	Om Chanting
		10	1	Selected Yogic Suksham Vyayam and Sthula Vyayam
		5	1	QRT
		15	2	ASANAS Vajrasana, Paschimottanasana, Halasana, Akarna-Dhanurasana, Ardha Matsyasana, and Chakrasana

		5	1	QRT
		15	3	PRANAYAMA Anuloma - Viloma, Bhramari, Sitali, and Sitkari
		5	1	Bhajan (Guru Stotram)
4.	Thursday	5	1	Om Chanting
		10	1	Selected Yogic Suksham Vyayam and Sthula Vyayam
		5	1	QRT
		15	2	ASANAS Vrikshasana, Veerabhadrasana, Dhanurasana, Matsyasana, and Sarvangasana
		5	1	QRT
		15	3	PRANAYAMA Nadi Sudhi, Nadi Shodhana, Ujjayi, Bhramari, Sitali and Sitkari
		5	1	Bhajan (Guru Stotram)
5.	Friday	5	1	Om Chanting
		10	1	Selected Yogic Suksham Vyayam and Sthula Vyayam
		5	1	QRT
		15	2	ASANAS Trikonasana, Paschimottanasana, Vakrasana, Sarvangasana, and Matsyasana
		5	1	QRT
		15	3	PRANAYAMA Kapalbhati, Trataka, Bhramari, Sitali and Sitkari
		5	1	Shanti Mantra (Om Sahana Vavatu)
6.	Saturday	Rest	Rest	Rest
7.	Sunday	Rest	Rest	Rest

#### CRITERION MEASURES

The required data of the blood pressure were collected by using a sphygmomanometer and were measured in millimeters of mercury (mmHg).

#### ADMINISTRATION OF TEST

**Blood Pressure:** Blood pressure falls on the arteries' walls, influenced by the heart's contraction of the left ventricle. Blood pressure takes two measurements: systolic (measured when the heart beats when blood pressure is highest) and diastolic (measured between heartbeats, when blood pressure is lowest). Blood pressure is written with the systolic blood pressure first, followed by diastolic blood pressure (120/80 ± 10).

**Purpose:** To measure blood pressure (systolic and diastolic).

**Equipment:** Mercury sphygmomanometer (dial type), cuff, and stethoscope.

**Procedure:**

- i. The cuff of the sphygmomanometer is wrapped around the forearm above the elbow, with earphones of the stethoscope in the researcher's ears; the bell of the stethoscope is placed on the bronchial artery just above the hollow of the elbow.
- ii. The cuff is pumped up until the artery collapses, which is no use beat could be heard.
- iii. Pressure is then slowly released as the researcher watches the gauge or mercury column.
- iv. When the first sound of the pulse is heard, the reading in millimeters of the mercury (mmHg) at that instant is recorded as systolic blood pressure.
- v. The researcher continued to release pressure slowly until a very dull, weak beat was noted.

vi. At that instant, the pressure in millimeters of mercury (mmHg) is noted as diastolic blood pressure.

Scoring: The researchers recorded the blood pressure in the units of millimeters mercury (mmHg). It was measured three times. The mean of these three measurements was recorded as the final score.

Table 2: Adult average for Blood Pressure in millimeters mercury (mm/Hg)

Acceptable	Normal	Borderline	High
Systolic BP	>120	< 140	140-160 > 160
Diastolic BP	>80	< 85	85-95 > 95

## STATISTICAL ANALYSIS

After giving 9 (nine) weeks of yogic training, the post-test data were collected to see the results on the blood pressure of the subjects. Then, to analyze the collected data, descriptive analysis, and paired sample t-tests were used to find out the characteristics of the data and the mean difference of the yogic training at a 0.05 level of confidence. The collected data were entered into an excel sheet and statistical analyses were conducted using the IBM SPSS software (version 21).

## ANALYSIS AND INTERPRETATION OF DATA

The collected data were statistically analyzed using descriptive analysis and paired sample t-tests to find out the characteristics of the data and mean comparison to see the impact of the structured yogic training on blood pressure among the students of Manipur University. The results are shown in Tables 3 and 4 respectively.

Table 3: Descriptive analysis of pre-test and post-test of Systolic Blood Pressure (SBP)

Variable	Test	N	R	Min.	Max.	Sum	Mean	SE	SD	Var.
SBP	Pre	50	67	97	164	5967	119.34	2.03	14.41	207.78
	Post	50	55	102	157	6107	122.14	1.97	13.94	194.49

The above table 3 reveals that the Mean (M) and Standard Deviation (SD) of pre-the test and post-test of the subjects on Systolic Blood Pressure (SBP) of Physiological Parameters were  $119.34 \pm 14.41$  and  $122.14 \pm 13.94$ , respectively. In addition, Range (R), Minimum (Min.), Maximum (Max.), Sum, Standard Error Mean (SEM) and Variance (Var.) of pre-test and post-test were 67, 97, 164, 5967, 2.03 & 207.78 and 55, 102, 157, 6107, 1.97, & 194.49, respectively.

The summary of paired sample t-tests of pre-test and post-test of Systolic Blood Pressure (SBP) of Physiological Parameters is presented in table 4.

Table 4: Summary of paired sample t-test of pre-test and post-test of Systolic Blood Pressure (SBP)

Variable	Test	N	Mean	MD	SD	SEM	t	p-value
SBP	Pre	50	119.34	2.8	14.41	1.99	1.41	0.16
	Post	50	122.14		13.94			

Significance at 0.05 level of confidence

tabulated  $t_{0.05}(49) = 1.68$

The finding shown in table 4 reveals that the values of the Mean (M) and Standard Deviation (SD) of pre-test and post-test of the subjects on Systolic Blood Pressure (SBP) of Physiological Parameters were  $119.34 \pm 14.41$  and  $122.14 \pm 13.94$ , respectively. In addition, the table shows that the Mean Difference (MD), Standard Error Mean (SEM), and p-value of pre-test and post-test of Systolic Blood Pressure (SBP) of Physiological Parameters were 2.8, 1.99 & 0.16, respectively. Further, the result indicates that; there was an insignificant difference found between the pre-test and post-test of Systolic Blood Pressure, as the calculated t-value of 1.41 is lesser than the tabulated t-value of 1.68 ( $p > 0.05$ ) at the 0.05 level of confidence (2 tailed) in 49 degrees of freedom (df). Therefore, the 9 (nine) weeks of yogic training causes an increase in SBP, yet maintains the SBP in the normal range.

The graphical representation of pre-test and post-test mean comparisons on Systolic Blood Pressure (SBP) of Physiological Parameters is shown in figure 1.

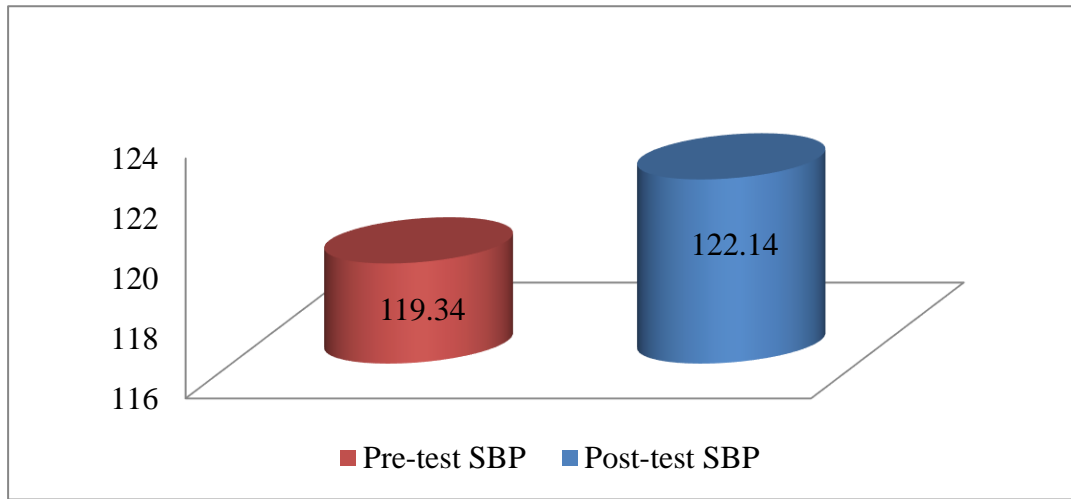


Figure 1: Mean comparisons of pre-test and post-test of Systolic Blood Pressure (SBP)

Table 5: Descriptive analysis of pre-test and post-test of Diastolic Blood Pressure (DBP)

Variable	Test	N	R	Min.	Max.	Sum	Mean	SE	SD	Var.
DBP	Pre	50	130	62	192	3995	79.90	2.65	18.79	353.23
	Post	50	37	63	100	3971	79.42	1.25	8.86	78.61

The above table 5 reveals that the Mean (M) and Standard Deviation (SD) of the pre-test and post-test of the subjects on Diastolic Blood Pressure (DBP) of Physiological Parameters were  $79.90 \pm 18.79$  and  $79.42 \pm 8.86$ , respectively. In addition, Range (R), Minimum (Min.), Maximum (Max.), Sum, Standard Error (SE) and Variance (Var.) of pre-test and post-test were 130, 62, 192, 3995, 2.65 & 353.23 and 37, 63, 100, 3971, 1.25, & 78.61, respectively.

The summary of paired sample t-tests of pre-test and post-test of Diastolic Blood Pressure (SBP) of Physiological Parameters is presented in table 6.

Table 6: Summary of paired sample t-test of pre-test and post-test of Diastolic Blood Pressure (DBP)

Variable	Test	N	Mean	MD	SD	SEM	t	p-value
DBP	Pre	50	79.90	0.48	18.79	2.39	0.20	0.84
	Post	50	79.42					

Significance at 0.05 level of confidence                      tabulated  $t_{0.05} (49) = 1.68$

The finding shown in table 6 reveals that the values of the Mean (M) and Standard Deviation (SD) of pre-test and post-test of the subjects on Diastolic Blood Pressure (DBP) of Physiological Parameters were  $79.90 \pm 18.79$  and  $79.42 \pm 8.86$ , respectively.

In addition, the table shows that the Mean Difference (MD), Standard Error Mean (SEM), and p-value of the pre-test and post-test of Diastolic Blood Pressure (DBP) of Physiological Parameters were 0.48, 2.39 & 0.84, respectively. Further, the result indicates that; there was an insignificant difference found between the pre-test and post-test of DBP, as the calculated t-value of 0.20 is relatively lesser than the tabulated t-value of 1.68 ( $p > 0.05$ ) at the 0.05 level of confidence (2 tailed) in 49 degrees of freedom (df). Therefore, the 9 (nine) weeks of yogic training decreases the Diastolic Blood Pressure (DBP), while maintaining the DBP in the normal range.

The graphical representation of pre-test and post-test mean comparisons of Diastolic Blood Pressure (DBP) of Physiological Parameters is shown in figure 2.

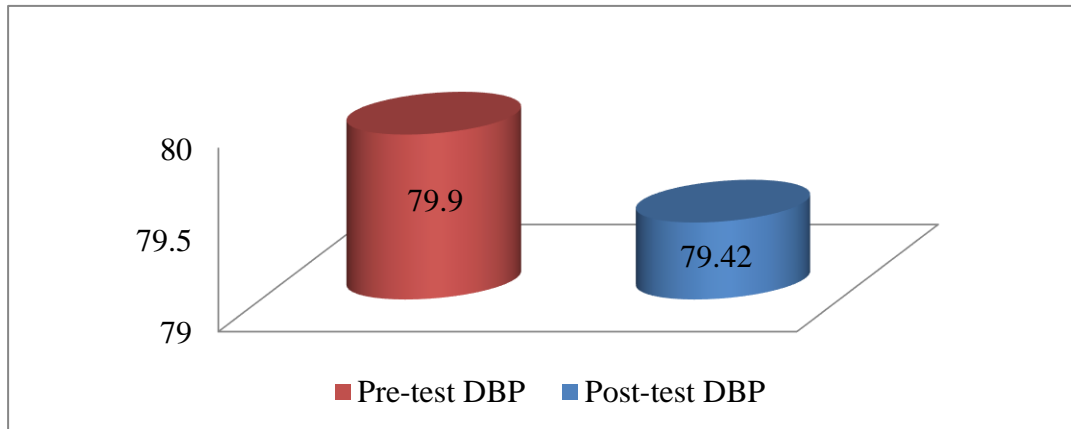


Figure 2: Mean comparisons of pre-test and post-test of Diastolic Blood Pressure (DBP)

## RESULTS

The study summarizes that the changes in the variables, i.e., systolic and diastolic blood pressure were found while comparing the pre-test with the post-test. The descriptive analysis results of the mean and standard deviation of the pre-test and post-test on systolic blood pressure were  $119.24 \pm 14.41$  and  $122.14 \pm 13.94$  respectively. The value of the range, standard error, and variance of the pre-test and post-test were 67, 2.03, & 207.78, and 55, 1.97, & 194.49 respectively. An insignificant difference was found in the p-value while comparing the mean for systolic blood pressure between the pre-test and post-test. The calculated 't' value was 1.41 which is lesser than the tabulated 't' which was 1.69, with 49 degrees of freedom at a 0.05 level of confidence. A significant difference was also found between the pre-test and post-test mean comparison of the systolic blood pressure, and the p-value is 0.16, ( $p > 0.05$ ). Therefore, there was an insignificant difference in systolic blood pressure after nine weeks of yogic training compared to baseline data.

The descriptive analysis results of the mean and standard deviation of the pre-test and post-test on diastolic blood pressure were  $79.90 \pm 18.79$  and  $79.42 \pm 8.86$  respectively. The value of the range, standard error, and variance of pre-test and post-test were 130, 2.65, & 353.23, and 37, 1.25, & 78.61 respectively. An insignificant difference was found in the p-value while comparing the mean for diastolic blood pressure between the pre-test and post-test. The calculated 't' value was 0.20 which is lesser than the tabulated 't' which was 1.69, 49 degrees of freedom at a 0.05 level of confidence. An insignificant difference was also found between the pre-test and post-test mean comparison of the diastolic blood pressure, and the p-value is 0.84, ( $p > 0.05$ ). Therefore, there was an insignificant difference in diastolic blood pressure after nine weeks of yogic training compared to baseline data.

Thus, regular yogic training results in an improvement in blood pressure. The results showed that the dependent variables were significantly improved due to the influence of the yogic training program among the subjects of different departments of Manipur University.

## DISCUSSION

In this study, the aim is to investigate the impact of a structured yogic training program on blood pressure among different departments of Manipur University. According to the World Health Organization (WHO) and International Society of Hypertension (ISH), blood pressure of 120/80 mmHg is defined as normal, 130-139/85-89 mmHg as high-normal and 140/90 mmHg and above as high blood pressure. According to statistical analysis, the present study results mentioned that the adjusted mean values of BP of pre-test and post-test were found as 119.34/79.90 mmHg and 122.14/79.42 mmHg respectively, which was found to be an insignificant difference. Although these results are under the normal range, this structured yogic training program of the present study shows maintaining blood pressure within the normal range.

### Systolic Blood Pressure

According to the World Health Organization (WHO) and the International Society of Hypertension (ISH), systolic blood pressure of 120 mmHg is defined as normal, 130-139 mmHg as high-normal, and 140 mmHg and above as high systolic blood pressure. When the result of the present study was examined, an insignificant effect was found in Systolic Blood Pressure 119.34 mmHg  $\pm$  14.41 to 122.14 mmHg  $\pm$  13.94 respectively.

### Diastolic Blood Pressure

According to the World Health Organization (WHO) and the International Society of Hypertension (ISH), the average normal value of Diastolic Blood Pressure is 80 mmHg, 85-89 mmHg as high-normal, and 90 mmHg and above as high diastolic blood pressure. The results showed a statistically insignificant reduction in Diastolic Blood Pressure at 79.90 mmHg  $\pm$  18.79 and 79.42 mmHg  $\pm$  8.86 respectively.

The training schedules of the present study played a vital role in the maintenance of blood pressure. Although the statistical result shows an insignificant effect, maintaining blood pressure is a very great task since it may avoid many unwanted circumstances.

The researcher found a supported studying the Journal of Yoga and Physical Therapy conducted by Arnulfo, R.J., Rosa, P.T., and Abraham, W.M. (2011), titled 'Effect of Hatha Yoga intervention on cardiovascular risk factors in physically active adult women'. Another supported study was conducted by Indla, D., and Narhare, P. (2011), titled 'The effect of yoga on heart rate and blood pressure and its clinical significance.' Further, the researcher also found a supported study by the International Journal of Yoga and Allied Sciences conducted by Annapoorna, K. and Vasantalaxmi, K. (2013) titled 'Effects of yoga therapy on obesity in females.' The researcher found a supported study by Evidence-Based Complement Alternative Medicine conducted by Marshall Hagins et al., (2013) titled 'Effectiveness of Yoga for Hypertension: Systematic Review and Meta-Analysis.' Further, the researcher found a supported study by the International Journal of Pharmaceutical and Clinical Research with the present study examined by Sujatha, T. and Judie, A. (2014) titled 'Effectiveness of a 12-week yoga program physiological parameters patient with hypertension.' The researcher found another supported by the International Journal of Research in Medical Sciences, which was conducted by Gadham, S., Sajja, V., and Rooha, (2015), titled 'Effect of Yoga on obesity, hypertension, and lipid profile'. This present result was supported International Journal of Physiology, which was conducted by Mamatha, Shree C., Prashanth, K.S. and Girija B. (2019), in a study titled 'Effect of Short-Term Pranayama on Perceived Stress, Sleep Quality, Heart Rate, and blood pressure. This present result was also supported by the Indian Journal of Clinical Anatomy and Physiology, which was conducted by Neha, H. Pandya, Toral, Goswam, I and Trivedi, R. S. (2020) titled 'Effect of Yoga on pulse rate and blood pressure.'

Results of the present study indicate that regularly practicing Yoga had better overall health, normalized heart pumps, and blood circulation. As per the results, Yoga practice had better and normalized circulating blood pressure, and normalized heartbeats compared to pre-test with post-test.

The objective of the present study was to assess the impact of a structured yogic training program on blood pressure in different departments of Manipur University students. The findings of the study revealed that there were insignificant differences in pre-test and post-test, which were proved by the application of appropriate statistical techniques namely the descriptive analysis (to know the characteristics of the data), and paired sample t-test (means comparison). The level of significance used in the statistical analyses was 0.05.

## TESTING OF THE HYPOTHESES

At the beginning of the study, hypotheses were formulated based on a statistical analysis of Blood Pressure. Testing of hypotheses is shown briefly in table 7.

Table 7: Testing of hypotheses based on statistical findings

Sl. No.	Hypotheses formulated	Decision
1.	There might be a significant difference between pre-test and post-test on the systolic blood pressure of Manipur University students after yogic training.	An alternative hypothesis was accepted and the null hypothesis was rejected.
2.	There might be a significant difference between pre-test and post-test on the diastolic blood pressure of Manipur University students after yogic training.	An alternative hypothesis was accepted and the null hypothesis was rejected.
3.	There might be a significant effect between pre-test and post-test on the Systolic Blood Pressure of Manipur University students after yogic training.	An alternative hypothesis was rejected and the null hypothesis was accepted.
4.	There might be a significant effect between pre-test and post-test on the Diastolic Blood Pressure of Manipur University students after yogic training.	An alternative hypothesis was rejected and the null hypothesis was accepted.

## FINDINGS

The statistical analysis finding revealed that there was an insignificant effect on Blood Pressure after nine weeks of yogic training. This considerable difference may be attributed to the fact that the subjects for this study belonged to Manipur University students who regularly underwent the systematic and regularly attained yogic training program. And they are more interested in Yoga as they are as young and energetic; therefore, they could perform effectively in any condition.

The study's finding shows an insignificant difference found between the pre-test and post-test on systolic blood pressure. As the calculated 't'-value = 1.41 which was lesser than the tabulated 't'-value = 1.69 and p-value = 0.16, ( $p > 0.05$ ). The study's finding shows an insignificant difference found between the pre-test and post-test on systolic blood pressure. As the calculated 't'-value = 0.20 which was lesser than the tabulated 't'-value = 1.69 and p-value = 0.84, ( $p > 0.05$ ). However, an insignificant effect between pre-test and post-test data was found. Systolic and diastolic blood pressure mean values are represented as bar diagrams (Figures no. 1 & 2) to understand the results better.

Hence, the study clearly shows that nine weeks of the yogic training program has an insignificant effect on blood pressure compared to pre-training data. But the present study's findings suggest that yoga can be used as a practical lifestyle to maintain the level of blood pressure under the normal range. It also helps to reduce the risk of hypotension, heart attack or stroke, or other complications. This study would help our brain and heart, receive nutrients and oxygen through our blood flow and also help to improve the overall health of the subject. Thus, regular yoga practice may help bring more to become normalize blood pressure to the body and maintain a disease-free lifestyle.

## CONCLUSIONS

Within the limitations of the present study and based on the findings, the following conclusions are drawn:

- i. The Yogic training schedules insignificantly effected Systolic Blood Pressure (SBP) by getting the Mean (M) values of pre-test and post-test mean as 119.34 mmHg and 122.14 mmHg respectively, which means the subjects were able to maintain their SBP.

- ii. The Yogic training schedules insignificantly effected Diastolic Blood Pressure (DBP) by getting the Mean (M) values of pre-test and post-test as 79.90 mmHg and 79.42 mmHg respectively, which means the subjects were able to maintain their DBP.
- iii. Nine weeks of yogic training were found effective. Almost all female students of different departments of Manipur University got health benefits like maintaining blood pressure, fitness, and wellness.
- iv. The positive effect was found by maintaining blood pressure, so it can be practiced by individuals who watch both systolic and diastolic blood pressure (under the guidance of a yogic expert).
- v. For more effectiveness, the study can also be done on different age categories in a larger group.
- vi. It is also concluded that though an insignificant effect was found in the result of blood circulation, maintaining the blood pressure of the body among female university students was found.

Hence, yogic training is helpful to the youths to maintain their blood pressure of the body. Normalized blood pressure produces a wide range of physical benefits and can have a positive effect on the overall well-being of society. Therefore, the present study concluded that an insignificant difference between the pre-test and post-test was found among students of different departments of Manipur University. Thus, the alternative hypothesis of the study is rejected and the null hypothesis is accepted.

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