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Effect Of Asana And Pranayama Get Familiar With Systolic Blood Pressure Among College Students

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Abstract

The current study's goal is to examine the Effect of Asana and Pranayama Get familiar with Systolic Blood Pressure among Physical Education Students. From Alagappa University in Karaikudi were chosen as the study's 60 men subjects. They lived in the period between 17 and 25. Three equal groups of twenty each were formed from the subject population. Three days a week for the twelve weeks of the practice period, group I practiced asana along with pranayama, group II practiced asana, and group III practiced pranayama. The data were gathered before and after the twelve-week practice program. The Sphygmomanometer measuring test was used to measure the physiological variable known as Systolic blood Pressure. The data were analyzed using Analyzing covariance (ANCOVA) method. The study's findings demonstrated that practicing asana with pranayama exercises and making alterations to one's pranayama exercises greatly enhanced one's Physiological Factors on Asana and Pranayama Get familiar with Systolic Blood Pressure among Physical Education Students.

Key words: Asana, Pranayama, Systolic Blood Pressure, ANCOVA

Introduction

The Sanskrit word for a bodily posture is asana. In a broad sense, asana refers to a particular position that can be kept for an extended amount of time while being calm and pleasant. The "Yoga Sutras" (aphorisms), which Patanjali composed in the second century before Christ, include the fundamentals of yoga practice. (Mahananda Sharanappa. H, 2021). Yoga is an age-old practice that aims to balance and improve a person's

physical, mental, emotional, and spiritual dimensions. It has been a long-standing custom in India that is slowly but surely spreading to Western society. "Yoga" refers to the super-conscious state of Samadhi, which is the merging of our individual consciousness with the Universal Divine Consciousness (**Dhanaraj. S, 2023**). Yoga is a philosophical discipline of physical exercise and pranayama that dates back between 2,000 and 4,000 years to what is now India. Numerous variations of yoga exist, each with unique practices but the same overall goal of controlling the mind and body (**Siddappa Naragatti, 2020**). The globe is adopting yoga more and more. It offers comfort to the anxious mind. It is a blessing for the sick. The current fashion is meant to keep the average man attractive and in shape. Some people take it to increase their creativity, IQ, and memory. With its many benefits, technology is increasingly being included into schooling (**Siddappa Naragatti, 2020**). Yoga wasn't introduced to the west until the 19th century, but it was initially performed in India thousands of years ago. In recent decades, research has been done on it as a treatment for mental stress, obesity, diabetes, hypertension, dyslipidemia, coronary heart disease, and chronic obstructive pulmonary disease (**Davendra Kumar Taneja, 2014**). A top strategy for growth oneself and reach one's potential is through yoga. The common consensus is that during the more advanced phases of yoga, super conscious states are obtained, bringing about feelings of bliss, profound peace, and the development of psychic abilities. Indian mystics and philosophers have been refining yoga for thousands of years (**Sarojini Devi, 2013**). Yoga is regarded as among the most important, useful, and priceless techniques known to man for overcoming a variety of physical and psychological issues (**Archika Sudhanshu, 2023**). Yoga is a practice with a long history that aims to improve one's physical, mental, emotional, and spiritual well-being (**Saroj Maroik, 2017**). Yoga pranayama or the science of controlling breath, In Indian philosophy, the term "prana"— which refers to all kinds of energy in the universe—means "control of prana." The primary objectives of these breathing methods are relaxation and improved respiratory efficiency because breathing is the fundamental act of being (**Ambareesha Kondam, 2015**). Yoga is a traditional method of self-improvement that promotes harmony between the spirit, the body, and the mind. Yoga is a science and is incredibly helpful for boosting overall health, which may help some people reach the necessary amounts of physical exercise (**Ambareesha K, 2017**). Over the past few years, yoga has become a very important complementary therapy. It is a comprehensive way of life with countless advantages for both the body and the mind. However, it is still unclear how yoga activities result in these advantages (**Vijay Kumar B.A, 2014**).

The phrase *prānāyāma* consists of two parts: *prāna* and *āyāma*. The word *prāna* means "life force" or "vital energy." The meaning of *Āyāma* is "expansion" or "extension". *Pranāyāma*, thus, is "an increase or prolongation of the size of *prāṇa*." Practices of *Pranayama* address four essential aspects of breathing: (1) Breathing in (*Pūraka*), (2) exhaling (*Recaka*), (3) retaining breath internally (*Antah kumbhaka*), and (4) retaining breath externally (*Bahih kumbhaka*) (**L Nivethitha , 2016**). Since the beginning of time, saints who lived in caves have employed *pranayama* methods—various forms of breathing exercises—to avoid illnesses and ensure their long-term existence. According to Patanjali, who codified yoga knowledge about 600 BCE, controlling *prana* (the mind) is achievable via controlling inhalation and exhalation (**Srinivasan T M, 1991**).

terminology used in yoga, such as samadhi and pranayama are also commonly used in the Bhagavad-Gita. The rishis of ancient India understood that a healthy physique is always necessary for practicing Raja-yoga. The term for this is " Ahlu dharma sadhanam, Sharirmadyam." Raja-yoga is a method of concentration used to release the atma, or soul, from the shackles of maya and into paramatma. So they developed what is known as "Hatha yoga," which includes pranayama, mudra, and asana (**Pallav Sengupta, 2012**).

Heart diseases are the most prevalent kind of cardiovascular disease (CVD) (CHD). Globally, cardiomyopathy, illness of the rheumatic heart (RHD), and stroke represent the main causes of mortality. Less than 10% of fatalities globally were brought on by CVD in the early 20th century, but that number rose to 30% by the end of the century (**Chittakath Shaima, 2016**). Heart is a vital organ that pumps blood, oxygen and vitamins to all parts of the body. For this pumping of oxygen and nutrients heart muscle itself requires oxygen and nutrient supply which is supplied by the coronary arteries (**Mani Deepika, 2017**). The heart pumps blood at a beats per minute of 72, or 1.2 hertz, with a beat lasting around 0.830 milliseconds. This increases blood circulation, which carries and distributes nutrients and oxygen and keeps the body's fluid balance and temperature stable. (**Vanessa Novaes Barros, 2019**).

Sample

Sixty men physical education Students were chosen from Alagappa University in Karaikudi to participate in the study in order to attain this goal. From 17 to 25 years old, they were. The subjects were split into three equal groups, each with twenty subjects. For the twelve weeks of the practice period, group I practiced asana together with pranayama, group II practiced asana, and group III practiced pranayama for three days each week.

Variable

The Sphygmomanometer measuring test was used to measure the physiological variable known as Systolic blood Pressure. When data were collected, they were analyzed using the paired sample 't' test, which is used to detect improvements that are statistically significant, then the one-way analysis of covariance, which is used to detect differences that are statistically significant, and finally the scheffe's post hoc test, which was used to determine which of the three experimental groups performed the best. The table below contains the results of the analysis of the Systolic blood Pressure data from the pre- and post-test results of the three experimental groups.

Procedure

The patient is not able to observe the mercury column when the sphygmomanometer is set up on a bench. Following five minutes of calm relaxation, the subject's blood pressure is taken; this measurement should be taken before any other. The individual is seated with their elbow roughly at heart level and their arm resting on the bench. After attaching the cuff, the pressure is raised to around 180 mm Hg. In the cubital fossa, the stethoscope is positioned above the brachial artery. Roughly two millimeters of pressure are discharged every second. Both the diastolic pressure—the pressure at which all noises stop—and the systolic pressure—the pressure at which the initial sounds are heard—are measured.

Information Gathering and Analysis

Table I presents pre and post-test means, standard deviations and dependent ‘t’ test values on Systolic blood pressure of three experimental groups.

**TABLE-I
THE SUMMARY OF MEAN AND DEPENDENT‘t’ TEST FOR
THE PRE AND POST-TESTS ON SYSTOLIC BLOOD PRESSURE OF THREE EXPERIMENTAL
GROUPS**

Mean	asana	pranayama	asana and pranayama
Pre- test	124.40	124.25	125.05
SD(±)	1.64	2.02	1.96
Post-test	121.30	121.25	120.00
SD(±)	1.30	1.62	1.95
‘t’-test	19.30*	12.47*	19.71*

(Table value required for significance at 0.05 level for ‘t’-test with df 19 is 2.20) (Scores in millimeters of mercury).

The paired sample ‘t’ was computed on selected dependent variables. The results are presented in the above Table I. The ‘t’ test value of asana group, pranayama group and combined (asana and pranayama) group are 19.30, 12.47 and 19.71 for systolic blood pressure. The experimental groups ‘t’ values are significantly higher than the required table value of 2.20 with degrees of freedom 19 at 0.05 level of confidence. The result of the study shows that Asana group, Pranayama and combined group has significantly improved the performance of systolic blood pressure. The one way analysis of covariance on systolic blood pressure of three experimental groups has been analyzed and presented in Table II.

TABLE-II
VALUES OF ANALYSIS OF COVARIANCE FOR THREE EXPERIMENTAL GROUPS ON
SYSTOLIC BLOOD PRESSURE

Adjusted post-test means							
asana	pranayama	asana and pranayama	SOV	SS	Df	MS	F-ratio
121.42	121.48	119.64	B.S	42.35	2	21.17	27.41*
			W.S	43.25	56	0.77	

(The table value required for Significance at 0.05 levels with df 2 and 56 is 3.15). (Scores in millimeters of mercury)

Table-II shows that the adjusted post-test mean value of Systolic blood pressure for Asana group, Pranayama group and combined (Asana and Pranayama) group are 121.42, 121.48 and 119.64 respectively. The obtained F-ratio of 27.41 for the adjusted post-test mean is greater than the table value of 3.15 with degrees of freedom 2 and 56 required for significance at 0.05 level of confidence. The results of the study indicate that there are significant differences between the experimental groups on Systolic blood pressure.

To determine which of the paired means had a significant difference, Scheffe’s test was applied as Post-hoc test and the results are presented in Table III.

TABLE – III
SCHEFFE’S POST-HOC TEST MEAN DIFFERENCES ON SYSTOLIC BLOODPRESSURE
AMONG THREE EXPERIMENTAL GROUPS

(Scores in millimeters of mercury)

Asana	Pranayama	Asana and Pranayama	Mean Differences	Confidence Interval Value
121.42	121.48	-	0.06	0.69
121.42	-	119.64	1.78*	
-	121.48	119.64	1.84*	

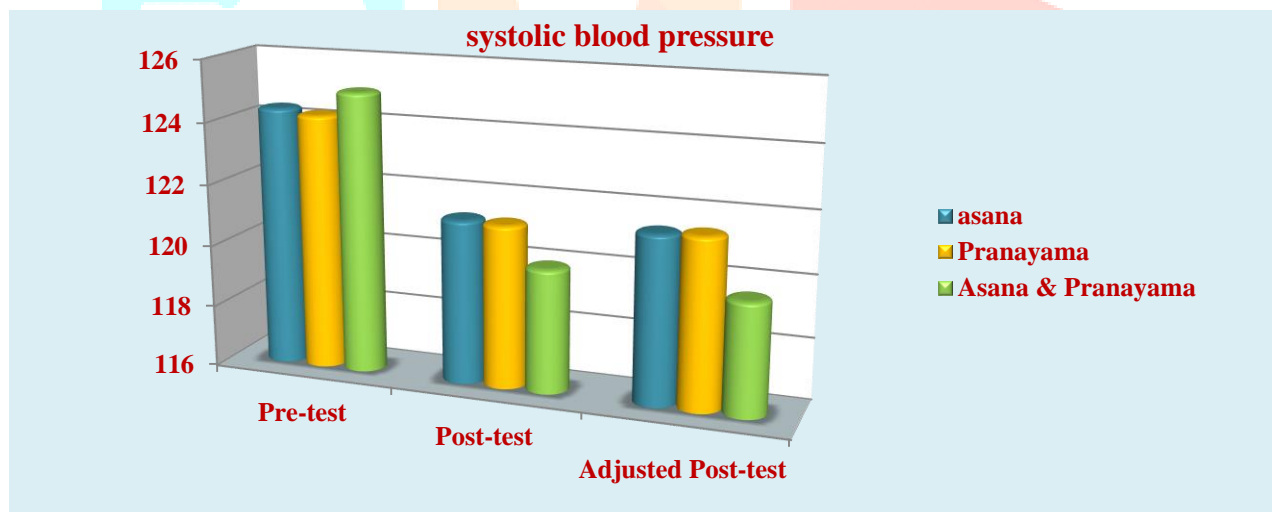
*Significance at 0.05 levels

Results of Post – Hoc Test on Systolic blood pressure

In the above table, the results of Scheffe's Post-hoc test are presented. The table shows that the Asana group and the Pranayama group had a mean difference of 0.06, which is less than the 0.69 confidence interval value. It shows that there is no significant difference between Asana group and Pranayama group on systolic blood pressure. The mean difference between Asana group and combined (Asana and Pranayama) group, Pranayama group and combined (Asana and Pranayama) group are 1.78* and 1.84* respectively. They above the 0.69 confidence interval value. That makes it clear that the group that performed both Asana and Pranayama at the same time increased their systolic blood pressure in response to the training more than the groups that performed each practice separately. Figure-IV visualizes the pre-, post-, and adjusted post-test mean values for systolic blood pressure for the Asana, Pranayama, and combination groups.

FIGURE – IV

THE GRAPHICAL REPRESENTATION OF THE PRE POST AND ADJUSTEDPOST-TEST MEANS VALUES OF ASANA GROUP PRANAYAMA GROUP AND COMBINED (ASANA AND PRANAYAMA) GROUP ON SYSTOLIC BLOOD PRESSURE



Discussion of the Results

However, because of the many types of pranayamas, the low number of accessible RCTs, and the variability of methodological quality, the data must be seen as preliminary. In order to include pranayamas as a supplement to pharmaceutical treatment and obtain consistent outcomes, methodological advancements are needed (Jeniffer Z, 2017). Based on the investigation's findings, the data were statistically evaluated using analysis of covariance (ANCOVA) to see whether the groups differed significantly from one another. To determine the level of significant difference between groups, if any, the 0.05 level of confidence was fixed. (Ramachandran P, 2023). Yoga asana and pranayama programs help to advance physiological factors like pulse rate and reduce body fat percentage. Additionally, these activities significantly lower anxiety and work-related stress, which

leads to a healthy lifestyle (Parthiban v, 2019). Although yoga therapy can be used to treat and restore certain chronic illnesses, its primary function is prevention. Significant improvements in physiological variables were seen in our study, indicating that yoga treatment is effective and enhances women's quality of life by lowering stress levels and decreasing weight. (Kaleeswari G, 2021).

Discussion on Hypothesis:

- (i) It was predicted that practicing asana with pranayama, asana practices, and pranayama among college-aged male physical education Students would significantly increase the Physiological Variable of Systolic blood pressure.
- (ii) The findings of the current study showed that a twelve weeks asana practice program combined with pranayama and asana groups significantly improved the selected Physiological Variable of Systolic blood pressure. Group factors had not significantly improved at the same time as asana practices. Therefore, at a significance level of 0.05, the first hypothesis was partially accepted and partially rejected.
- (iii) It was predicted that there would be a large difference in the amount of improvement on the chosen independent variable between the experimental groups I and II and the treatment group III. The findings of the post-hoc analysis showed that the physiological variable of systolic blood pressure would significantly differ between the asana with pranayama, asana, and pranayama. The second hypothesis was thus accepted at a 0.05 threshold of significance.

Conclusion

The results showed that practicing asana along with pranayama substantially improved Male physical education Students' Systolic blood pressure compared to asana practices. According to the research, pranayama practices that combine asana with breathing exercises, or asana can be promoted to improve Systolic blood pressure. The goal-oriented approach that should emphasize the value of asana with pranayama, pranayama practices, and integrate their timetable for the advancements of physical fitness preserves flexibility as well as Systolic blood pressure of the physical education Students.

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