

## Research Article

# Influence of Pranayama Practice on Selected Physiological Variables among Kabaddi Players



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**ABSTRACT**

For the study, 30 kabaddi players were selected from Government Arts College, Nandanam, Chennai, as subjects. The players who participated in Intramural competitions were selected as subjects. The study was limited to the selected physiological variables such as breath-holding time, pulse rate, and systolic and diastolic blood pressure. The experimental group was given pranayama practice for a period of 6 weeks. The data were collected on the selected physiological variables before training as well as immediately after 6 weeks of training. The significance of the difference among the means of experimental group was found out. Pre-test and post-test were conducted and the data were analyzed through *t*-test. The result of the study showed significant differences on selected physiological variables such as breath-holding time, pulse rate, and diastolic blood pressure due to the influence of pranayama practice.

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**INTRODUCTION**

Pranayama is a scientific mental and physical exercise. In this exercise, the diaphragm and the abdominal muscles get good exercise by controlled movement and relaxation, respectively. The heart, lungs, and digestive organs such as stomach, liver, and nervous and endocrine system, the spinal cord and spinal nerves get massage and the rejuvenating exercise. It helps to normalize the circulation of blood. The process of pranayama involves puraka (Whaling), Kumbhaka (retention), and rechaka (exhaling). One who practices pranayama regularly and punctually enjoy vitality, glowing face, sparkling eyes, sharp memory, and concentration of mind. Regular and systematic practice of pranayama removes many of the chronic diseases and brings purity of the mind. Pranayama develops the working and capacity of the lungs, the heart, the liver, and other important internal organs, purifies blood, and increases its supply of blood and oxygen and this ensures proper supply of never energy for the different functions of the body.<sup>[1-5]</sup>

**METHODOLOGY**

To achieve the purpose of the study, 30 kabaddi players were selected Government Arts College, Nandanam, Chennai. The players who participated in the intramural competition were selected as subjects for the study. The experimental group underwent pranayama practice (pranayama below and nostril method) weekly 3 days (Monday, Wednesday, and Friday) at

early morning from 6 to 6.45 am for 6 weeks. The study was delimited to selected physiological variables that are breath-holding time, pulse rate, and systolic and diastolic blood pressure. Breath-holding time was measured by counting the number of seconds between the holding of breath by closing the nostril with the thumb and fingers and the final release of breath. Systolic and diastolic blood pressure was measured by sphygmomanometer. Pre-test and post-test data were analyzed through *t*-test.

**RESULTS AND DISCUSSION**

The following tables illustrate the statistical results of the effect of pranayama on selected physiological variables among kabaddi players. To find out the difference between means of the initial and final data under the study, *t*-ratio was used.

Table 1 shows the analyzed data on breath-holding time, the pre-test mean of the group was 37.50. The post-test mean of the group was 46.42. The obtained *t*-ratio 1.97 was significant at 0.05 level (1.97). The obtained *t*-value (1.97) was higher than the table value (1.97) which was significant.

**Discussion on Findings**

The results indicated that the experimental group significantly improved breath-holding time, due to the influence of pranayama practice.



**Table 1:** Mean, SD, SE, and t-ratio of the pre- and post-test on breath-holding time

Variables	Test	Mean	SD	SE	t-ratio
Breath	Pre-test	37.50	9.04	2.61	1.97
Holding time	Post-test	46.42	12.53	3.70	

Significant at 0.05 level, degrees of freedom n-1=11 is 1.79. SD: Standard deviation, SE: Standard error

**Table 2:** Mean, SD, SE, and t-ratio of the pre- and post-test on pulse rate

Variables	Test	Mean	SD	SE	t-ratio
Pulse rate	Pre-test	79.66	7.60	2.19	2.97
	Post-test	70.33	7.86	2.27	

Significant at 0.05 level for degrees of freedom n-1=11 is 1.79. SD: Standard deviation, SE: Standard error

Table 2 shows the analyzed data on pulse rate. The pre-test mean of the group was 79.66. The post-test mean of the group was 70.33. The obtained t-ratio 2.97 of was significant at 0.05 level (1.97) as it is higher than the table value (1.97). This was significant.

The results indicated that the experimental group significantly decreased in pulse rate, due to the influence of pranayama practices.

Table 3 shows the analyzed data on systolic blood pressure. The pre-test mean of the group was 132. The post-test mean of the group was 128.08. The obtained t-ratio 1.06 was not significant at 0.05 level (1.97). The obtained t-ratio 1.06 was not significant at 0.05 level (1.97). The obtained t-ratio value (1.06) was lesser than the table value (1.97) which was in significant.

The results indicated that the experimental group did not significantly decrease in systolic blood pressure, due to the influence of pranayama practice.

Table 4 shows the analyzed data on pulse rate. The pre-test mean of the group was 66.5. The post-test mean of the group was 71.16. The obtained t-ratio 2.31 was significant at 0.05 level (1.79). The obtained t-ratio value (2.31) is higher than the table value (1.79) which was significant.

The results indicated that the experimental group significantly increased in diastolic blood pressure, due to the influence of pranayama practice.

## CONCLUSIONS

From the results of the study of the following conclusions were drawn:

**Table 3:** Mean, standard deviation, standard error, and t-ratio of the pre- and post-test on systolic blood pressure

Variables	Test	Mean	SD	SE	t-ratio
Systolic blood pressure	Pre-test	131.00	5.60	1.61	1.06
	Post-test	128.08	7.71	2.22	

Significant at 0.05 level, degrees of freedom n-1=11 is 1.79. SD: Standard deviation, SE: Standard error

**Table 4:** Mean, SD, SE, and t-ratio of the pre- and post-test on diastolic blood pressure

Variables	Test	Mean	SD	SE	t-ratio
Diastolic blood pressure	Pre-test	65.50	65.50	6.11	2.31
	Post-test	71.16	5.91	1.70	

Significant at 0.05 level, degrees of freedom n-1=11 is 1.79. SD: Standard deviation, SE: Standard error

1. Pranayama practice had significantly improved breath-holding time.
2. Practice of pranayama for 6 weeks had significantly decreased pulse rate among the subjects.
3. With a slight decrease in systolic pressure and a slight increase in diastolic pressure, the practice of pranayama did not indicate any significant influence in blood pressure of the subjects.

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