



ORIGINAL RESEARCH PAPER

Sport Science

EFFECT OF ASANA AND PRANAYAMA ON PHYSIOLOGICAL PARAMETER OF ATHLETES

KEY WORDS: Asanas, Pranayamas, Breath holding capacity, Respiratory rate, Maximal oxygen uptake.

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ABSTRACT

The purpose of the study was the find out the effects of asanas and pranayama on physiological parameter of athletes. The researcher selected N=60 collegiate students with a mean age of 19 ± 2.13 years. The selected college students were further divided into three experimental groups n=20 Breath-holding capacity group, n=20 Respiratory rate group, and n=20 Maximal oxygen uptake (VO_2 max) group. The entire Experimental group received the treatment through a systematic training program of selected asanas and pranayama for six weeks. The training schedule was prepared for six weeks, five days a week; the training session was 45 minutes in duration a day. Standard tests and measurement procedures were adopted to collect data for the study. Pre and post-test data of all the subjects from the three groups were collected before and after the experimental period of six weeks. The researcher applied the paired t-test as the statistical tool for the study to find out the statistical significance difference between the pre-test and post-test of all groups after the six weeks of the training program of selected asanas and pranayama. The result of the study indicates that the practice of asanas and pranayamas had a significant effect on Breath-holding capacity, respiratory rate, and maximal oxygen uptake was found to be statistically significant at a 0.05 level.

INTRODUCTION

Today, yoga is a topic that is attracting interest from a wide range of people. It may be used as science in many areas, including education, sports, and sports (health/family welfare, and psychology/medicine). This is according to recent study trends. Yoga is widely acknowledged as a spiritual discipline with freedom as its ultimate objective, therefore it cannot just be seen as a treatment. Yoga is now widely acknowledged to be utilized as therapy as well as for greater mental growth and social control (mental or moral).

Yoga should be a part of your everyday practice since it is the science of proper living. It has an impact on a person's entire existence, including their physical, mental, emotional, psychological, and spiritual aspects. Yoga aims to precisely synchronize the various physiological functions for the benefit of the entire body. (Khosravi, H., 2015).

Pranayama controls and regulates breathing so it is very beneficial for people with disabilities. This technique dramatically improves endurance, balance, and muscle strength and ensures better sleep by improving vital energy circulation. Pranayama helps control the seizures that are common in these children. The sounds of animals make their performances interesting. Kukuriya pranayama (dog panting) is very popular with children. Sitari pranayama and Sitkari pranayama help people with Down syndrome who have a thick tongue and difficulty speaking. Just like Pranava Pranayama, Nada Pranayama helps relieve stress and sublimate pent-up emotions. Also known as a "breath cleaner," mukhavastrika helps remove stale, stagnant air from the lungs and clears out excess carbon dioxide in the blood. Practice shortens your reaction time and improves your memory and comprehension (Swami Satyananda Saraswati, 2004).

Asanas should be performed in a certain way. Patanjali mentions three very short maxims dealing with the principle, purpose, effect, and mechanism of asanas. It should be emphasized again that the main concern here is the static aspect of Asana. This maxim gives an idea about the overall goal of asanas (Koul H.K., 1991). One must slow down one's efforts and at the same time concentrate one's attention and contemplate infinity. This means that the asanas are relaxed and effortlessly performed. The mind is withdrawn from the body, passes into the infinite world, becomes unconscious of the body, and forgets the body. It is more important and effective to direct the mind to infinity, and in this state, the

maximum benefits are obtained (Kuvalyanand Swami, 1956). This is done by paying attention to the incoming and outgoing breath flow and feeling it touching the tip of your nose. When you breathe in, you feel cool, and when you breathe out, you feel warm. Also, try to breathe a little deeper and more rhythmically. This also contributes to the fact that you can really relax when doing the asanas (Tengshe, Shrikrishna B. 1981).

Procedure

The purpose of the study was the find out the effects of asanas and pranayama on physiological parameter of athletes. For this researcher selected N=60 college students with a mean age of 19 ± 2.13 years. The selected college students were further divided into three experimental groups n=20 Breath-holding capacity group, n=20 Respiratory rate group, and n=20 Maximal oxygen uptake (VO_2 max) group. The entire Experimental group received the treatment through a systematic training program of selected asanas and pranayama for six weeks. The training schedule was prepared for six weeks, five days a week; the training session was 45 minutes in duration a day. The subjects practiced asanas (savasana, sarvangasana, bhujangasana, salvasana, halasana, paschimatasana, tulasana, yogamudra, tadasana and vajrasana) and pranayamas (anuloma-viloma, suryavedha, chandavedha, bharamari and kapalbhati). Standard tests and measurement procedures were adopted to collect data for the study. Pre and post-test data of all the subjects from the three groups were collected before and after the experimental period of six weeks. The researcher applied the paired t-test as the statistical tool for the study to find out the statistical significance difference between the pre-test and post-test of the group after the six weeks of the training program of selected asanas and pranayamas. The level of significance was 0.05.

Discussion of findings

In order to identify the significant differences between pre and post-test of the three experimental groups i.e., Breath holding capacity, respiratory rate and Maximal oxygen uptake (VO_2 max) collected pre-data and post-data were analyzed using the analysis of paired t-test. The finding of the study is as follows:

Table no.1
Descriptive Statistic (mean & SD) & t-value of Breath-Holding Capacity Group

Variable	Pre-test		Post-test		Mean difference	t-value
	Mean	SD	Man	SD		
Breath-holding capacity	44.8	5.217	54.1	6.239	9.3	9.312

*Significant at 0.05 levels.

Table no.1 shows the mean & SD and t-value of the pretest and posttest of Breath-holding capacity after the six weeks of the training program. The mean & SD value of the pretest was 44.8±5.217 and for the post-test was 54.1±6.239 also reveals the t-value was 9.312 of the pre & post-test.

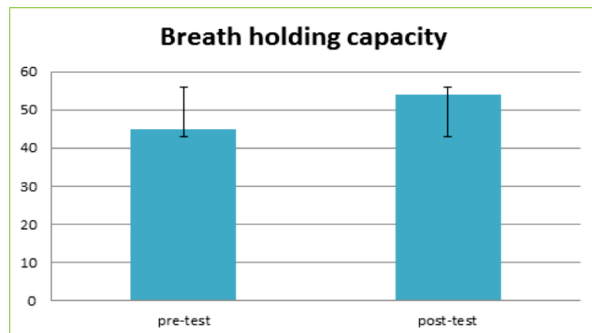


Fig no. 1: Graphical Representation of Pre and Post-Test Mean Scores on Breath-holding capacity group

Table no.2 Descriptive Statistic (mean & SD) & t-value of Respiratory rate group

Variable	Pre-test		Post-test		Mean difference	t-value
	Mean	SD	Man	SD		
Respiratory rate	20.3	3.18	16.1	3.63	4.2	7.20

*Significant at 0.05 levels.

Table no.2 shows the mean & SD and t-value of the pretest and posttest of the Respiratory rate after the six weeks of the training program. The mean & SD value of the pretest was 20.3±3.18 and the post-test was 16.1±3.63 also reveals the t-value was 7.20 of the pre & post-test.

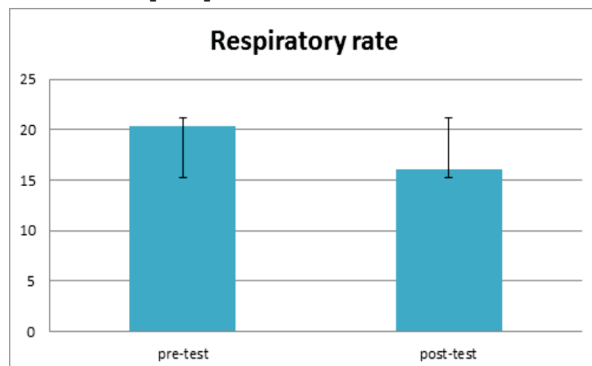


Fig no. 2: Graphical Representation of Pre and Post-Test Mean Scores on Respiratory rate group

Table no.3 Descriptive Statistic (mean & SD) & t-value of Maximal oxygen uptake (VO₂ max) group

Variable	Pre-test		Post-test		Mean difference	t-value
	Mean	SD	Man	SD		
Maximum oxygen uptake (VO ₂ max)	2.289	0.3573	2.795	0.2362	0.506	5.569

*Significant at 0.05 levels.

Table no.3 shows the mean & SD and t-value of the pretest and posttest of Maximal oxygen uptake after the six weeks of the training program. The mean & SD value of the pretest was 2.289±0.3573 and for the post-test was 2.795±0.2362 also

reveals the t-value was 5.569 of the pre & post-test.

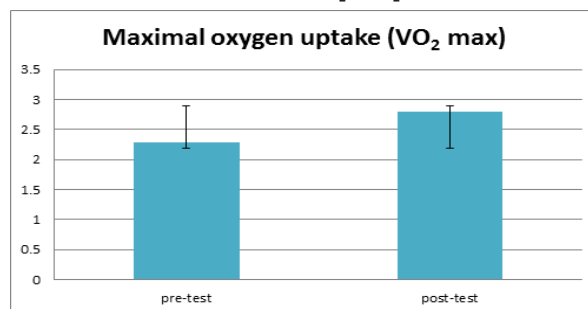


Fig no. 3: Graphical Representation of Pre and Post-Test Mean Scores on Maximal oxygen uptake (VO₂ max) Group

CONCLUSION

Based on the study's analysis, it is possible to draw the conclusion may be drawn:

1. The asanas and pranayama play an important role in a practitioner's ability to hold their breath after the six-week course.
2. The asanas and pranayama significantly reduce the respiratory rate in students.
3. The impact of six weekly asanas and pranayama training sessions was sufficient to induce a change in maximal oxygen uptake (VO₂ max) in trainees.

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