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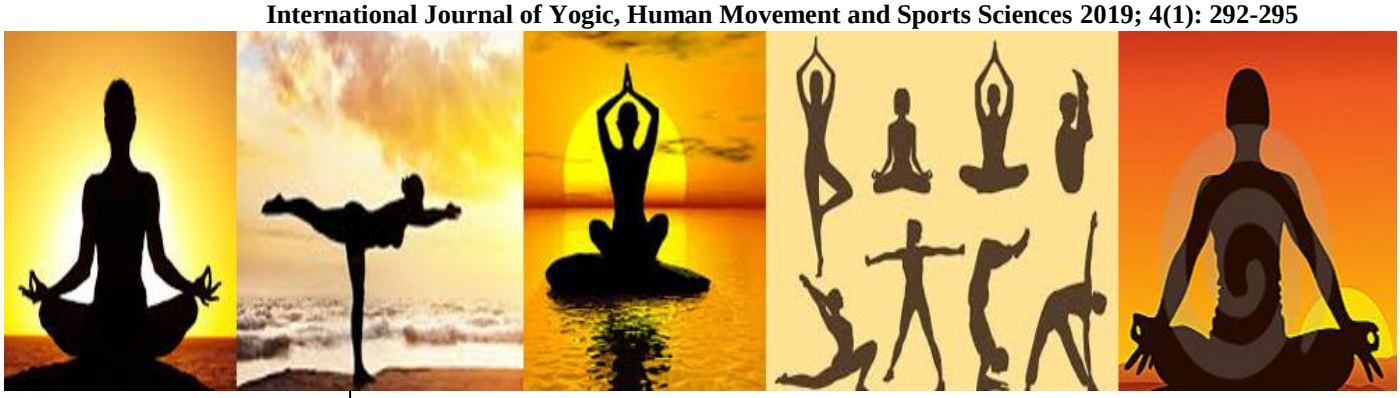

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Effect of pranayama on breathe holding capacity of teacher trainee girls

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Abstract
Sport is as old as human society and it has achieved a universal following in the modern time. Now it has become extremely competitive. It has acquired an immense popularly and in view of its scientific organization. The purpose of the study was to investigate the effect of pranayama on breathe holding capacity of teacher trainee girls. 60 B.Ed girls' students were selected purposively from Institute of Education Haldia and Kabi Sukanta Secondary Teachers Training Institute, Purba Medinipur, West Bengal. Age range of the subject was 20-25 years. The experiment was conducted for a period of six weeks, every day in the early morning. The subjects had undergone Pranayama for 60 minutes, six days per weeks. In order to find out the significant difference of Pranayama on Breathe Holding Capacity of teacher trainee girls Students "t" test were set at 0.05 level of confidence. The result were reflect that breath holding capacity were found significant difference from pre-test to post-test of teacher trainee girls.

Keywords: Girls, pranayama, teacher trainee

Introduction
Yoga is an ancient discipline designed to bring balance and health to the physical, mental, emotional, and spiritual dimensions of the individual. It is long popular practice in India that has become increasingly more common in Western society. Pranayama is the control of the Prana and the vital forces of the body. It is regulation of the breath. This is the most important step. The aim of Pranayama is the control of Prana. Pranayama begins with the regulation of the breath for having control over the life-currents or inner vital force. In other words, Pranayama is the perfect control of the life-currents through control of breath. Breath is external manifestation of the gross Prana. A correct habit of breathing must be established by the regular practice of Pranayama. In ordinary worldly persons the breathing is irregular.

Pranayama is the art of breath control whereby the mental and physical state is brought to a harmonious state of health and serenity. It is a technique that increases, controls and frees the flow of prana throughout the entire body. The practice of pranayama brings awareness to the breath, which then connects us rapidly with our inner physical and emotional state. Our relationship with life is mirrored in our breathing. When we're nervous or excited our breathing becomes shallow, jerky and rapid. A relaxed, quiet state will create slow and deep breathing. Rishis of the past noted that animals with rapid rates of respiration such as mice who take 1,000 breathes a minute have a shorter life span than animals with a slow respiration rate such as the tortoise which breathes four times a minute and can live up to 300 years. In this way life span was measured in terms of the rate of respiration, slow breathing increasing life span and rapid breathing hastening death.

If you can control the Prana you can completely control all the forces of the Universe, mental and physical. The Yogi can also control the Omnipresent manifesting power out of which all energies take their origin, whether concerning magnetism, electricity, gravitation, cohesion, nerve-currents, vital forces or thought-vibrations, in fact the total forces of the Universe, physical and mental.

Breath holding time is the time taken by the subject to hold his breath as long as he can. During voluntary breath holding, tissues continue to utilize oxygen and liberate carbon dioxide. Therefore during breath holding arterial pO2 falls and pCO2 rises.

Since both these factors are powerful respiratory stimulants, a point is reached where the respiratory drive becomes so strong that the person cannot hold the breath any longer. The point at which breathing can no longer be voluntarily inhibited is called the breaking point. The breaking point is generally reached when alveolar pO2 is 56 mm of Hg and alveolar pCO2 is 49 mm of Hg. Either an increase in pCO2 or a decrease in pO2 stimulates central and peripheral chemoreceptors which in turn stimulate respiration through respiratory centers, thus influencing breath holding time.

Breathing is important for two reasons. It is the only means to supply our bodies and its various organs with supply of oxygen which is vital for our survival. The second function of breathing is yoga that it is one means to get rid of waste products and toxins from the body. According to we have a fire (Agni) in the body, situated in the vicinity of the naval, between the pranavayu and the apana-vayu. The flame itself is constantly changing direction: on inhalation the breath moves towards the belly, causing a draft that directs the flame downward like in fireplace; during exhalation the draft moves the flame in the opposite direction, bringing with it the just burned waste matter. It is a breathing pattern where the exhalation is twice as long as the inhalation is aimed at providing more time during exhalation for freeing the body of its blockages.

Breath-holding has, however, two much less well-known but important properties. First, the central respiratory rhythm appears to continue throughout breath-holding. Humans cannot therefore stop their central respiratory rhythm voluntarily. Instead, they merely suppress expression of their central respiratory rhythm and voluntarily 'hold' the chest at a chosen volume, possibly assisted by some tonic diaphragm activity. Second, breath-hold duration is prolonged by bilateral paralysis of the phrenic or vagus nerves. Possibly the contribution to the breakpoint from stimulation of diaphragm muscle chemoreceptor is greater than has previously been considered. At present there is no simple explanation for the breakpoint that encompasses all these properties.

Holding the breath has the therapeutic and psychic effects. It has a sledded shooting effect on the human nervous systems, steadies the heart activities and regulates the pulse. This the most effective exercise to activate nervous system. It is sure that, it develops determination in man.

Statement of the Problem

The purpose of the study was to investigate the effect of pranayama on breathe holding capacity of teacher trainee girls.

Methodology

For the purpose of the study 60 B.Ed girls students were selected purposively from Institute of Education Haldia and Kabi Sukanta Secondary Teachers Training Institute, Purba Medinipur, West Bengal. Age range of the subject was 20-25 years.

Training Protocol

The researcher had given training six days per weeks for a period of six weeks. The training schedule was as followed:- Anuloma-Viloma, Surya Bhedana, Ujjayi, Bhastrika, Bhramari pranayamas, Shitali and Bahya Pranayama were practiced respectively Experimental Procedure The experiment was conducted for a period of six weeks, every day in the early morning. The subjects had undergone Pranayama for 60 minutes, six days per weeks. Frequency, duration and repetition of Pranayama were determined under a steady progressive manner from the first day to last day of the treatment.

Detailed Experimental Programmed of Training Scheduled

1. Total duration: 6 weeks.
2. Frequency: 6 days per week.
3. Time: 6.00am – 7.00am

Table 1: Frequency, duration and repetition of Pranayama

Sl.no	Name of the pranayama	repetition	passive rest	duration
1	Anuloma-Viloma	6Times	10 Seconds	9 Minutes
2	Surya Bhedana	6Times	10 Seconds	9 Minutes
3	Ujjay	6Times	10 Seconds	9 Minutes
4	Bhastrika	6Times	10 Seconds	9 Minutes
5	Bhramari	6Times	10 Seconds	9 Minutes
6	Shitali	6Times	10 Seconds	9 Minutes
7	Bahya ranayama	6Times	10 Seconds	9 Minutes

Statistical Procedure

In order to find out the significant difference of Pranayama on Breathe Holding Capacity of teacher trainee girls Students "t" test were set at 0.05 level of confidence, which was considered as appropriate and adequate for the purpose of this study.

Finding

Table 2: Mean Standard deviation and't' test in Breath Holding Capacity of teacher trainee girls.

Variable	Mean		Std- Deviation		t-Ratio
	Pre- Test	Post-Test	Pre- Test	Post-Test	
Breath Holding Capacity	39.97	43.20	5.33	5.78	2.212*

$Tab_{0.05}$-(58) = 2.00, *=Significant, NS= not significant.

Table-2 indicated that the mean and standard deviation scores of Breath Holding Capacity of pre-test of subject had been found 39. 97 ± 5.33and those of post-test had been found 43.20 ± 5.78. The calculated "t" value (2.212 > 2.00) of Breath Holding Capacity of the subjects were found to be greater than the table value; so the result reflected a significant difference at 0.05 level of confidence. The results had been presented graphically

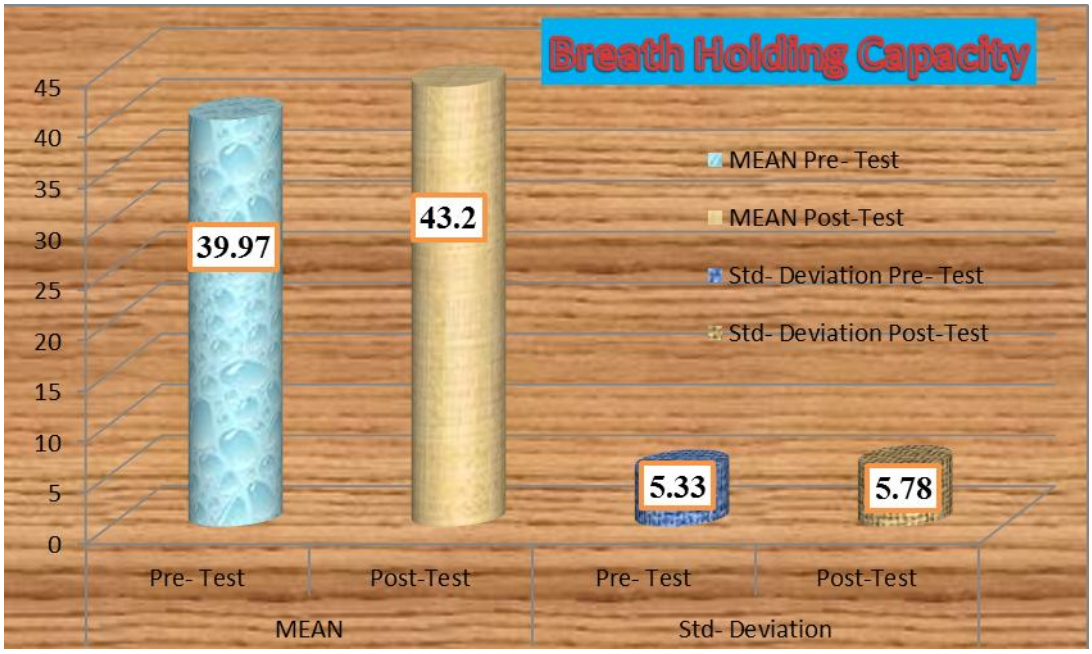

Fig-1: Comparison of Breath Holding Capacity between the pre-test and post-test of teacher trainee girls

Discussion of Findings

In case of breath holding capacity were found significant difference from pre-test to post-test of teacher trainee girls. Pranayama is the control of the Prana and the vital forces of the body. It is regulation of the breath. This is the most important step. The aim of Pranayama is the control of Prana. Pranayama begins with the regulation of the breath for having control over the life-currents or inner vital force. In other words, Pranayama is the perfect control of the life-currents through control of breath. Breath is external manifestation of the gross Prana. A correct habit of breathing must be established by the regular practice of Pranayama. In ordinary worldly persons the breathing is irregular. Pranayama is a form of physiological stimulation. The regular practice of Pranayama is a form of adaptation to a repeated stimulus. Breathing is the only autonomic function that can be consciously controlled and it is the key in bringing the sympathetic and the parasympathetic nervous system into harmony. This Study is consonance with the study of Grover P *et al*.-1998 [5]. Breath is the only function through which we can influence the involuntary nervous system, i.e. we can establish rhythms of breathing with our voluntary nerves and muscles, which will affect the involuntary nervous system. This Study is consonance with the study of Nidhi Jain *et al*. 2005. A study by Bhargava MR *et al*. showed a statistically significant increased breath holding time after the pranayama practice. The same study explained that during pranayama training. Regular inspiration and expiration for longer duration would lead to acclimatization of central and peripheral chemoreceptors for both hyper apnoea and hypoxia. This Study is consonance with the study of Joshi LN *et. al.* 1998 [11]. In case of breath hold capacity of male aged were no significant difference but it improve from pre-test to post-test due to Acclimatization of the stretch receptors of the chest, the bronchial walls and the alveoli increase the synchronization between the lung tissue and the cortex. The prolonged inhalation in pranayama leads to an increased breath holding time. This Study is consonance with the study of Bhargava MR *et al.* 1982 [2].

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