



Effects of Yogic Practices on Physical Physiological and Psychological Variables among School Students

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Received 22nd June 2014, Accepted 30th June 2014

Abstract

The purpose of the present study was to find out the effect of Yoga practices on Physical, physiological and Psychological variables of school students. For this purpose, 38 subjects from the residential school studying higher secondary class were selected as subjects and they were divided in to two equal groups with 19 each as experimental and control group. Both the group undergone usual physical training in the morning forty five minutes general fitness and evening one and half an hour in their choice in playing different games and apart from the routine activity the experimental group underwent selected yogasana practice daily morning 60-minute included 10 minutes of warm-up and the control group not given any special training. The training period for this study was 8 weeks in a schedule of 5 days in a week. The pre and post test were conducted prior and after the training program on the selected physical fitness variables of 50 meter dash, standing broad jump, situps and sit and reach, physiological variables of vital capacity, resting heart rate, breath holding time, respiratory rate, systolic pressure and diastolic pressure and psychological variables of mental health, self confidence and anxiety. The mean, standard deviation and t-value were assessed both experimental and control group separately and thereby significant level were analyzed. The significant level was fixed at 0.05 levels. The result of the study revealed that the experimental group shown the significant improvement in all the selected variables where as in control only 50 m dash and vital capacity having significant improvement and all the remaining variables are not having any significant improvement. The results revealed the effectiveness of yogasanas in physical fitness, physiological systems and psychological efficiency of school students.

Keywords: Psycho-physiological, Auditory, Visual, and Tactile.

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Introduction

The word yoga comes from the Sanskrit language and means "to integrate". Yoga promotes a harmonious working together of the body's components leading to both physical and mental training. Yoga is a scientific system which brings harmony in body and mind. Asana play significant role in toning up the neuro-muscular glandular system of the body to maintain the vitality of bodily organs. Yoga provides the path to achieve greater perfection of the body, life and mind. Yoga, an ancient Indian concept, represents the way of life which endows perfect health comprising physical, mental, ethical and spiritual development. Yoga physically creates a toned, flexible, and strong body and physiologically improves respiration, energy, vitality and helps to maintain a balanced metabolism, promotes cardio and circulatory health, relieves pain and also improves athletic performance. Yoga helps

psychologically to relax and handle stressful situations more easily. Yoga teaches to have a calm mind and can focus our energy on the particular activity. Yoga brings positive thoughts and self-acceptance. Yoga is a great form of exercise and a mind-body practice that can have physical, mental and emotional benefits. Yoga also is an effective way to develop greater self awareness, acceptance, and the ability to be present in the moment.

Yoga is perhaps the only form of activity which massages all the internal glands and organs of the body in a thorough manner. Yoga acts in a healthy manner on the various body parts. This stimulation and massage of the organs in turn benefits the mass by keeping away diseases. Yoga ensures the optimum blood supply to various parts of the body, by gently stretching muscles and joints as well as massaging the various organs. Regular yoga practice brings about mental clarity and calmness, increases body awareness and also relieves chronic stress patterns, relaxes the mind, centers attention and also sharpens concentration. Self confidence may be very important a person's life. Self confidence may boost a person to work, to think new

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ideas and achieve the goal he wants to achieve. When a person develops self confidence in himself it may change his life and the entire world may seem different to him. Self confidence may help to make a person into a successful person. Mental health refers to the overall well-being of an individual. It is about the balance of the social, physical, spiritual and emotional aspects of life. Our Mental Health is characterized by our personal growth, sense of purpose, self-acceptance, and positive relationship with other people.

Mental Health is the balance of all aspects of life - the social, physical, spiritual and emotional. It is the psychological state of well-being. Yoga has been used to lower blood pressure, reduce stress, and improve coordination, flexibility, concentration, sleep, and digestion. Yoga strives to increase self-awareness on both physical and psychological level. Studies have also shown that Yoga effects in increased brain activity with better performance and doctors even suggest that yoga can enhance cognitive performance. Yoga practice can elicit improvements in the health related physical fitness (Mark., 2007; Vinekar, 1957). Giri(1996) found that Yogic practice improves the physical fitness. Yogic Asanas and physical exercises improved flexibility (Moorthy, 1982; Raub, 2002; Swaminathan, 2010). Amutha (2010) conducted a study on the effect of selected Yoga Programme on Anxiety, VO₂max and Flexibility and the result shown the significant improvement. Characteristically yoga is a slow paced, slow breathing exercising technique, which is in sharp contrast to the symptoms and characters of the anxiety and our reaction to it.

Driven by its characteristic prolonged breathing, yoga helps dampen the causes of anxiety within one's mind. The hormonal reactions in the blood are neutralized by determined and forceful self restraint. The shortness of breath, rapid pulses and heart beats get soothed by steady but gradual supply of oxygen and reduction in circulation due to yoga. Yogic training induces more physical and vital effects than ordinary physical exercises (Kulkarni, 1997). Yogic exercises had reduced the anxiety and increased the maximum oxygen uptake and flexibility (Nagarajan, 2010). Yoga training significantly decline in basal heart rate (Udupa K, 2003). Yoga training is helpful to increase vital capacity and breathe holding time (Bhole, 1972 & 1999). Bhargava, et al (1988) found in their study that the yoga and pranayama practice significantly decline in systolic blood pressure.

Dhanaraj (1974) found that Yoga training is beneficial on physiological parameters of vital capacity, breath holding time and physical fitness of flexibility. Ananda Kumar (2009) found that the yoga and pranayama practice significant improvement in flexibility, explosive power and self confidence and significant reduction in resting pulse rate and respiratory rate. Paul Jeeva Singh (2010) found the significant improvement on vital capacity through yoga training. Yogic practice has the significant reduction of total

anxiety (Kocher, 1972). Yoga offers a fine tool for the development of the emotional personality of men (Mohan, 2005). Sound health is the men's priceless treasure. If one does not possess sound health one cannot enjoy success, prosperity and other comforts of life. Health, happiness and peace of mind are those assets treasures that cannot be purchased. Stress according to Yoga is imbalance. Imbalance is a misery at the mental and physical levels, it is excessive speed and thus a demanding situation causes pain and leads to ailments and diseases. Many studies have proved that yoga and meditation are beneficial in cases of psychiatric and psychosomatic disorder like stress, aggression, anxiety, depression, mental retardation, hyper tension, diabetes, etc (Mark Nesti, 2004). Susan Lark (1993) said that practicing Yoga will "provide effective relief of anxiety and stress. Hatha yoga could be a helpful adjunct to medical and psychological treatment when practiced regularly by clients on their own to improve feelings of physical health, reduce their anxiety and enhance their self-concepts and emotional tone."

Yoga has tremendous positive effect on our mental health. Mental health is human ability to face and solve problems and select the correct alternative that results in happiness of mind. Theoretical and philosophical aspects of yoga endow one an impartial and healthy outlook towards life. Yoga and mental health are closely interrelated. Those who are regularly practicing yoga exercises get tremendous benefits that result in a deep effect on their mental health. The study done by Mohinder (2000) supports the findings that experimental group has significantly improved the psychological fitness. Vijayendra Pratap (1968) found that the short term Yoga training have shown favorable result towards mental health. Yoga and mental health are closely interrelated. Those whom are regularly practicing Yoga experience tremendous changes that result in a deep effect on their mental health. Reduction of tension and restoration of flexibility are some of the mental health benefits derived from Yoga.

Yoga helps to free the mind from mental disturbances thereby steadies the mind. Decrease in nervousness, confusion, depression, irritability and fatigue are some of the other benefits resulting from regular Yoga practice. Javnbakht (2009) conducted a study with 65 women having symptoms of depression and anxiety, and he discovered that attending a twice-weekly 90-minute yoga class for two months led to a significant decrease in anxiety. Kirkwood G, (2005) in a review of eight studies on the use of yoga for anxiety, researchers found positive result. Yoga, originated in India thousands years ago, is a method of learning that aims to attain the unity of mind, body, and spirit through three main Yoga structures: exercise, breathing, and meditation (Gilbert, 1999).

There are plenty of research studies conducted in yoga in relation to physical, physiological and psychological variables and almost all the studies given a very strong input in improving the said qualities.

Methodology

The core aim of the present study was to find out the effect of selected Yoga practices on Physical, physiological and Psychological variables of school hostel boys. For the purpose of this study 38 higher secondary class students were selected as subjects from a residential school from Chidambaram. The subjects were divided into two groups equally with 19 each as experimental and control group. All the subjects were undertaken general physical training for forty five minutes in the morning and one and half an hour both general fitness works out and playing games in their choice in the evening. Apart from above training experimental group underwent one hour yoga training included 10 minutes of warm-up before the physical fitness training in the morning. The one hour yoga training includes eleven yogasanas and two pranayamas. The Yogasanas are Padmasana, Sarvangasana, Halasana, Bhujangasana, Matsyasana, Chakrasana, Dhanurasana, Ardhamatsyendrasana, Vazerasana, Sirshasana and Savasana and Pranayamas are Kapalabati and Shitali. The pre and post test were conducted on selected variables of physical fitness variables of 50 meter dash, standing broad jump, sit ups and sit and reach,

physiological variables of vital capacity, resting heart rate, breath holding time, respiratory rate, systolic pressure and diastolic pressure and psychological variables of mental health, self confidence and anxiety.

All the tests were carried out with standardized procedure. The psychological parameters were assessed through standardized psychological questionnaire. For assessing self confidence, self confidence scale questionnaire designed and standardized by Hardy and Nelson (1972) has been used. This scale has 56 statements with yes or no option and the score ranges from 0 to 56. Anxiety was measured by using sports competition anxiety questionnaire designed by Rainer Martens (1977) with 15 statements and mental health was assessed through mental health inventory constructed by Jagadish and Srivatsav (1983) it consists of 55 statements with 4 point rating scale. The collected data of experimental and control groups were statistically analyzed by using mean standard deviation and t- test and presented in Table 1 and 2. The level of significance was fixed at 0 .05 level of confidence with the table value of 2.10. The t-values of 2.10 and above were considered significant in this study. In the tables it was denoted by star (*) which indicates 0.05 significant level.

Results

Table I. The mean, standard deviation and t-value of experimental group

S.No	Physical, Physiological and Psychological Parameters	Pre test Mean	Post test Mean	SD	Mean Difference	t-value
1	50Meters Dash	8.43	8.12	0.55	0.31	2.15*
2	Standing Broad Jump	1.97	2.10	2.42	-0.13	3.68*
3	Sit-ups	18.65	19.22	0.66	-0.57	2.44*
4	Sit and Reach	17.86	19.31	3.51	-1.45	6.69*
5	Vital Capacity	2.59	2.98	5.43	-0.39	4.02*
6	Resting Heart Rate	65.44	63.00	2.08	2.44	3.11*
7	Breath Holding Time	23.55	26.76	1.14	-3.21	4.83*
8	Respiratory Rate	18.43	16.11	4.34	2.32	3.14*
9	Systolic Blood Pressure	119.66	116.72	12.06	2.94	2.52*
10	Diastolic Blood Pressure	81.60	77.08	1.89	4.52	3.18*
11	Mental Health	118.76	126.66	0.88	-7.90	5.64*
12	Anxiety	23.42	19.14	0.32	4.28	2.22*
13	Self Confidence	32.43	41.12	1.24	-8.69	6.08*

* Significant at .05 level of confidence $t_{0.05}(18) = 2.10$

Table -1 reveals the mean, standard deviation and t-value of pre and post test scores of experimental group. The mean value post test scores of all the selected variables were improved and it shown the efficiency of yoga training in the physical, physiological and psychological parameters. The t-value of all the selected

variables were above the table value of 2.10 and it shown the significant improvement in the selected variables. The highest significant value were found in sit and reach (6.69) followed by self confidence (6.08) and mental health (5.64).

Table II. The mean, standard deviation and t-value of control group

S.No	Physical, Physiological and Psychological Parameters	Pre test Mean	Post test Mean	SD	Mean Difference	t-value
1	50Meters Dash	8.28	7.49	2.31	0.39	2.91*
2	Standing Broad Jump	2.02	2.08	5.26	-0.06	1.34
3	Sit-ups	17.79	18.07	8.64	-0.28	1.06
4	Sit and Reach	18.56	18.58	0.43	-0.02	0.68
5	Vital Capacity	2.36	2.44	0.86	-0.08	3.20*
6	Resting Heart Rate	67.45	65.76	4.54	1.69	0.65
7	Breath Holding Time	22.68	24.23	3.88	-1.55	1.25
8	Respiratory Rate	16.54	18.22	0.98	-1.68	1.42
9	Systolic Blood Pressure	122.43	123.18	0.69	-0.75	0.39
10	Diastolic Blood Pressure	78.66	81.42	1.43	-2.76	1.98
11	Mental Health	122.55	120.86	8.62	1.69	2.02
12	Anxiety	22.85	26.28	1.04	-3.43	0.74
13	Self Confidence	35.86	33.08	0.64	2.78	1.98

* Significant at .05 level of confidence $t_{0.05}(18) = 2.1$

Table -2 reveals the mean, standard deviation and t-value of pre and post test scores of control group. The t-value of 50 m dash (2.91) and vital capacity (3.20) were having significant improvement. The mean value of post test scores of standing broad jump, sit ups, sit and reach, resting heart rate and breathe holding time were shown the non significant improvement whereas the mean value of post test scores of respiratory rate, systolic pressure, diastolic pressure, mental health, anxiety and self confidence were not shown any improvement.

Conclusions

The results of the present study indicate the effectiveness of yogasanas in physical fitness, physiological systems and psychological efficiency of school students. In the experimental group all the selected variables were significantly improved in some extent and it teach us that yoga training is useful to everyone in particularly sports persons to achieve the higher performance level because the selected variables in the study were more related to the sports men too. Further the control group post test means score indicates

that the physical training alone not enough to improve the psychological efficiency. From the study it is believed that the yoga training is not only beneficial for psychological development but also physiological and physical fitness development.

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