

Effects of selected yogic practices on blood pressure among school boys

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ABSTRACT

The purpose of the study was to find out the effect of Yogic practices on Blood Pressures among intermediate school boys. For this purpose the 60 college students in the age group of 14- 18 years at Dharm Samaj Inter College Aligarh were selected at random as subjects and were divided into two groups namely experimental group and control group. The training programme was for a period of twelve weeks. During this period, the control groups were not given any training. The data were collected on the blood pressure variable (pre test) as well as after twelve weeks yogic training (post test). Paired sample 't' test was used to find out significant difference between the pre- and post-test means and significant difference that was exists between the yogic practice group and control group on blood pressure variables. The significance was set at 0.05 level. The result of the study shows the yogic practice has decreased the Blood Pressure significantly. It was concluded from the results of the study that yogic practice has brought positive changes in Blood pressure (Systolic and Diastolic blood Pressure) and it was due to the performance of various Asanas, Pranayama and Yoga nidra.

Keywords: Yogic Practices, Blood pressure.

Introduction

Yoga is a process of control over the mind stuff, as defined by Patanjali in his second aphorism in Patanjali Yoga sutras: 1.2 Satyanand Saraswati (2012). The word "Yoga" is derived from the Sanskrit root "Yuj" which means yoke, uniting, or connection. Muktibodhananda S. (2013), in Hath Yoga Pradipika, says, yoga is a union between the individual soul and the supernatural soul. It is a way of life, which can be practiced by any human being regardless of age gender and condition of health it is based on general physical

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mental practices, which operate all mankind alike. It is an inseparable part of the Indian life and culture. It has come down to us from ancient times with an unbroken tradition.

Yoga is an ancient system of self spiritual development which provides a holistic approach to man through its ideology and techniques. Nayak & Shankar (2004) Yoga is a science & its practice harmonizes the body and mind. Yoga is very useful for promoting total health. Yoga is alternative forms of physical activity that can help some individuals achieve the recommended level of physical activity. Yoga is increasing in popularity Chandler (2001) and Raub (2002). With a recent report suggested that 15 million Americans have practiced yoga at least once in their lifetime Saper et al (2004). It works effectively in the form of treatment in three ways - preventive, therapeutic, rehabilitation. Kreitzer (2005) Yoga therapy has proved its excellence in psychological disorders and hypertension. Hypertension represents one of the most prevalent old conditions in the Indian population. The main cause of high blood pressure is stress and tension. Yoga can be very effective in dealing with stress and blood pressure. It can fight for reasons, as well as the effects of hypertension and reducing blood pressure can stabilize blood pressure. Asanas calm their mind and make the nervous system regular and balanced, which controls the stress. The sympathetic and parasympathetic nervous system, which is involved in stress response, also gets stabilized in the practice of asanas resulting in regulation of the blood pressure. Asanas, which control blood pressure, belong to the forward bending asanas, the Supine, sitting and the inverse group. Although the forward bending is the fundamental posture prevailing by people suffering from high blood pressure, while adhomukha shavasana is the most beneficial posture for blood pressure. The horizontal position of the spine in these asanas allows the heart to slow down, because there is no tension to pump the blood against the brain's gravity. Heart rate and cardiac output slow down and blood pressure is controlled simultaneously.

Methodology

The study was formulated as a simple random group design, consisting of pre-test and post-test the subject were (n=60) randomly selected to equal group of school students age the age range from 14 to 18 years among the two groups the control group was strictly under control, without undergoing any yogic practices. The experimental group 'yogic group' had to undergo with the experimental treatments. Group A was provided asana pranayama and Yoga nidra to school boys for a period of twelve weeks and 5 days in a week from 7:30 to 8:30 o'clock A.M in the Dharm Samaj Inter College Aligarh Uttar Pradesh India. The control group was not allowed to participate in any of the training program except their daily routine works. The subjects were trend for a period of 12 week and after this period significant improvement was measured in the Blood pressure of school students. The data were analysed by applying paired sample t-test technique. The level of significance was set at 0.05.

Training Programme

Table no 1. Yogic Training Programme.

Asanas			Pranayamas	Yoga nidra
Shavasana	Garunasana	Janushirasana	Nadi-Shodhana	Yoga nidra in shavasana
Makrasana	Nokaasana	Shashankasana	Ujjayi	
Chakrasana	Padamasana	Brakshasana	Bhastrika	
Trikonasana	Bakasana	Pavanmuktasana	Shitali	
Dhanurasana	Bhujangasana	Mayoorasana	Sheetkari	
Sarvangasana	Matayasana	pashichimotanasana	Bhramari	

During the training period the yogic group underwent their respective training programme 5 days in a week for 12 weeks in addition to their regular daily routine on the training days, practices lasted in the morning from 7:30 to 8:30 A.M. The control group did not involve in any training program except their daily routine.

RESULTS

Table 2: Control Group of Systolic Blood Pressure

Groups	Mean	N	Std. Deviation	Std. Error Mean	Mean difference	t	p
Pre-test	114.93	30	11.39	2.08	.27	.119	.90
Post-test	115.20	30	7.47	1.36			

*The level of significance at 0.05 = p value .90

Interpretation: It is analyzed that the mean difference (.27) between pre and post test rating score is very low. The t-value is very low and its p-value is .119 which is lesser than our maximum acceptable level of significance (.05). It clearly shows that means of pre-test and post-test scores are statistically equal and whatever the difference they show, the difference is insignificant. The result of the Study indicates that absence of our interventions doesn't cause any significant level of change in systolic Blood Pressure among the adolescents. In other words, control subjects were unaffected in terms of systolic Blood Pressure scores.

Table 3: Experimental Group of Systolic Blood Pressure

Groups	Mean	N	Std. Deviation	Std. Error Mean	Mean difference	t	p
Pre-test	115.40	30	5.48	1.00	5.30	4.89	.00
Post-test	110.10	30	5.53	1.01			

*The level of significance at 0.05 = p value .00

Interpretation: It is analyzed that there is a positive mean difference of 5.30 from pre-test to post-test rating. It indicates that there is the decrease in systolic Blood Pressure score due to the delivery of yogic practices. The t-value is significant which specify that means of pre and post test scores were significantly decrease. It indicates that our intervention causes a significant level of decrease in systolic Blood Pressure among the adolescents.

Fig. 1: Graphical representation of Mean of Systolic Blood Pressure of both the groups.

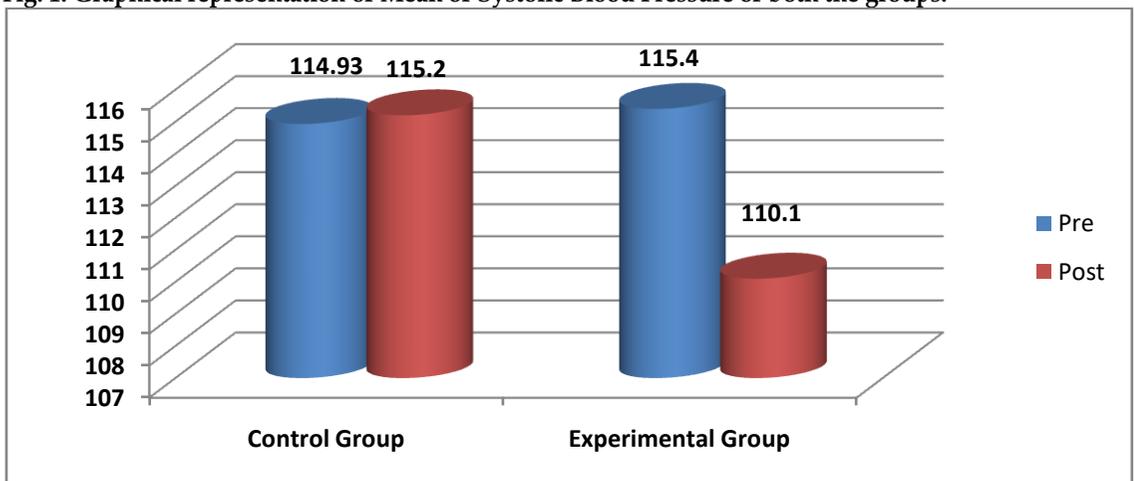


Table 4: Control Group of Diastolic Blood Pressure

Groups	Mean	N	Std. Deviation	Std. Error Mean	Mean difference	t	p
Pre-test	81.17	30	8.26	1.51	.40	.243	.81
Post-test	80.77	30	8.68	1.59			

*The level of significance at 0.05 = p value .81

Interpretation: It is analyzed that the mean difference (.40) between pre and post test rating scales is very low. The t-value is very low and its p-value is .817 which is lesser than our maximum acceptable level of significance (.05). It clearly shows that means of pre-test and post-test scores are statistically equal and whatever the difference they show, the difference is not significant. The result of the Study indicates that absence of our interventions doesn't cause any significant level of change in diastolic blood pressure among the adolescents. In other words, control subjects were unaffected in terms of diastolic blood pressure scores.

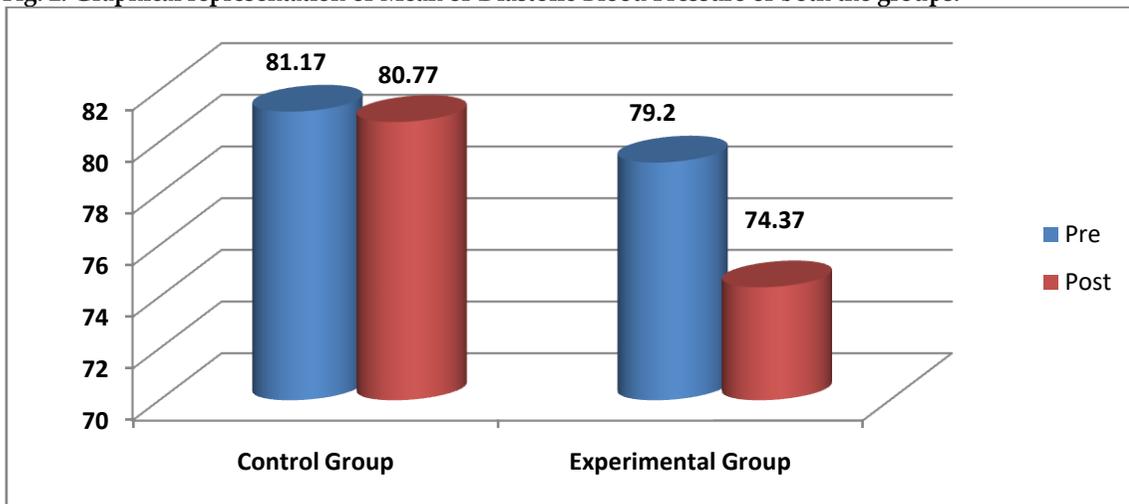
Table 5: Experimental Group of Diastolic Blood Pressure

Groups	Mean	N	Std. Deviation	Std. Error Mean	Mean difference	t	p
Pre-test	79.20	30	4.77	.872	4.83	4.29	.00
Post-test	74.37	30	5.69	1.04			

*The level of significance at 0.05 = p value .00

Interpretation: It is analyzed that there is a positive mean difference of 4.83 from pre and post test rating. This indicates that there is the decrease in diastolic blood pressure score due to the delivery of yogic practices. The t-value is significant which indicates that means of pre-test and post-test scores are significantly decrease. It indicates that our intervention causes a significant level of decrease in diastolic blood pressure among the adolescents.

Fig. 2: Graphical representation of Mean of Diastolic Blood Pressure of both the groups.



Discussion

Wolff et al (2013) reported that a small yogic program for the patient to practice at home seems to have an antihypertensive effect, as well as a positive effect on self-evaluating quality of life compared to controls. This means that simple yogic practices may be useful as a supplementary blood pressure therapy in addition to medical treatment when prescribed

by first aid physicians. According to Sonwane & Mishra (2016) Yoga is a helpful intervention in hypertensive subjects. Yoga and pranayama are more beneficial to hypertensive subjects than normal individuals. Vungarala and Satyanand (2016) add that Yoga is a balance between mind, body, and soul and also it improves the energy levels of the body. Yogic practices include (asana, Pranayama, meditation etc.) also play an important role in reducing blood pressure by effective and non-invasive way. In accordance to our findings, studies done by Sundar et al, 1984; Murugesan et al, 2000; Dickinson et al, 2008; Schmidt et al, 1997; Joseph et al, 2005; Alexander et al, 1996; Steptoe, 1977; Patel & Marmot, 1988; showed significant improvement in Systolic, and diastolic Blood Pressure. Innes et al. (2012) suggest that yogic practices may offer a safe and sound body, beneficial for reducing sleep and mood disturbance, perceived stress, anxiety, and blood pressure in older women. Shantakumari (2012) reported that yogic intervention for 3 months showed a significant decrease in Systolic, and diastolic Blood Pressure from 141.71±9.79 to 132.23±7.89 mm Hg, DBP from 90.57±4.07 to 85.49±5.03 mm Hg and FBS from 155.86±60.53 to 126.63±40.59 mg%. Yoshihara (2011) indicated that the mental state can influence the hypothalamic-pituitary-adrenal axis and alter the cortisol levels. Cortisol, discharged from the adrenal cortex, is a biochemical index of HPA axis activation and is a significant marker associated with psychological stress.

Conclusion

12 weeks of yogic practices program for school boys to practice at school seems to have a positive effect on systolic blood pressure and diastolic blood pressure. This implies that yogic practices may be useful as an additional blood pressure therapy in addition to medical treatment when prescribed by primary care physicians. In this study we may concluded that Yogic practices can be advocated to improve the blood pressure among school boys and hence to prevent heart disease diseases in future. And it will definitely help to geriatric and medical patient.

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