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Effect of yoga on heart rate and blood pressure on sports person

Daljeet Singh

VPO. Shahpur, Dist. Hisar, Haryana, India

Abstract
The cardiovascular morbidity is increasing in India in recent years. The present study was done to know the effect of yoga on heart rate and blood pressure in sports person in the year 2014-15 at Chaudhary Devi Lal University (Haryana) with an objective to assess the effect of yogic *exercise* on heart rate and blood pressure before the start of yoga practice and again *after* that 15 week training of yogic exercise had a positive effect on heart rate and blood pressure of sports person. From the study it was observed that significant reduction in the heart rate occurs in the subjects practicing. The systolic blood pressure was lowered to a highly significant level and no effect on diastolic blood pressure.

Keywords: blood pressur and heart rate

Introduction

The word yoga is derived from its Sanskrit origin "YUJ" which means "to bind", "to join" or "to apply". In the words of Maharishi Patanjali, "yoga is the restraint of the process of the mind". Yoga has been extensively studied for the beneficial effects on human health [1-2]. Yoga is practiced all over the world. It produces consistent physiological changes and have sound scientific basis [3]. The cardiovascular changes due to the process of ageing are being pre-poned ever since the past few decades [4]. There is a growing popularity of different types of recreational activity today. Decisions concerning the choice of a particular form of activity are usually made intuitively, without consideration of actual results for the body. The decision is often driven by current fashion. One of the most fashionable forms of physical activity today is Yoga asana.

Psychosocial stresses of our modern life precipitates various cardiovascular and other disorders by distorting basic neuroendocrine mechanism. The psychosocial stresses activate limbic system and hypothalamus which controls the autonomic nervous system. When this system is stimulated, increase in output of both adrenaline and nor adrenaline occur, both from sympathetic nerve fibres as well as from adrenal medulla causing increase in heart rate, systolic and diastolic blood pressures.

Yoga is widely practiced for its benefits to body and mind. Yoga therapeutics is an increasingly appreciated discipline, particularly in India where it is overseen by the Ministry of Health and Family Welfare's Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy (AYUSH). Not many studies have assessed the influence of integral yoga practices on psychological and health variables, establishing many possible benefits. Yoga is a psycho-somatic-spiritual discipline for achieving union & harmony between our mind, body and soul and the ultimate union of our individual consciousness with the Universal consciousness. (Madanmohan, 2008) [5].

A recent survey has suggested that 15 million Americans have practiced yoga at least one in all life. Yoga is an ancient discipline designed to bring parlance and health to the physical, mental, emotional and spiritual dimension of the individual. Yoga is often depicted metaphorically, as a tree and comprises eight aspects or "limbs" yam a (universal ethics), niyama (individual ethic), asana (physical postures), Prayanama (breath control), pratyahara (control of the senses), dharma (concentration), Dyane (meditation) and Samadhi (bliss).

(M. Sucic and I. Oreskovic 1995, R. Yana gibori *e t al*. 19 93) [6, 7] Moreover, it has been determined with the studies that in order to find out the effects of regular exercises on the lipoproteins, at least 5-week regular exercise is required to have positive effects on the lipid metabolism (R.M. Sekeroglu *et al*, 1997), exercises have positive effects on all body regimes and prevent the occurrence of health problems (F. Turgay *et al*, 2002) [9].

Studies by Rajesh (2009) [10] sivasankaran (2004) Yogendra (2004) [12] and Manchanda (2000) [13] found that total cholesterol, LDL, secrum triglyceride can be managed in the body with the help of yogic life style intervention.

The latest research in the field of physical finites and sports has recommended that the yogic exercise have a very positive effect on the physiological variables of layman and even on sports person. There for this study was carried out to find the effect of yogic exercise on heart rate and blood pressure of sports person.

Objective of the study

To find out whether there was any effect of yogic exercises on heart rate and blood pressure of sports person.

Material and Methods

The methods of study were spited our following heads:

1. **Sampling**: In the present investigation, randomly sampling plan was used for selecting the samples. This investigation was conducted on a total 25 sports person between the ages of 16 to 25 years.
2. **Collection of the data:** The selected sample went through training for 15 weeks under the supervision of yoga experts and researchers. The intervention consists of yoga asana and pranayama were performed 60 minutes in the

morning. These variables heart rate and blood pressure were determine in pretest sample on the first and posttest samples on the last day of the training. After getting the reports of both the samples, the data was analyzed statistically.

3. **Statistical procedures**: Keeping in view the object as well as design of the study, the appropriate statistical techniques such as t-test, SD and mean were used to analyze the data.

Result & Discussion

Table 1: Comparison of pretest and posttest of sports person on heart rate.

Sources	N	Mean	S.D.	t-ratio
Pre test	25	71.36	2.46	3.50**
Posttest	25	69.44	1.19	

**Significant at .01 level of confidence.

Table 1 presented that the t-ratio, S.D. and mean score of pre and posttest of yogic exercises on heart rate. The t-ratio 3.50 was significant at .01 level of confidence. There was significant difference between the pretest (71.36) mean value and posttest (69.44) mean value show that the yogic exercises have a positive effect on reducing the heart rate of sports person. The graphical representation figure no.1.

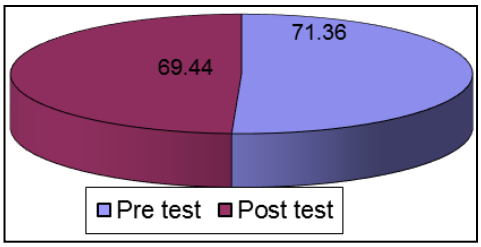

Fig 1: Mean of pretest and posttest of sports person on heart rate

Table 2: Mean SD and t-ratio of pretest and posttest of sports person on systolic blood pressure.

Sources	N	Mean	S.D.	t-ratio
Pre test	25	128.00	5.00	5.77**
Posttest	25	121.60	2.38	

**Significant at .01 level of confidence.

Table 2 demonstrates that the t-ratio, S.D. and mean score of pre and posttest of yogic exercises on systolic blood pressure. The t-ratio 5.77 was significant at .01 level of confidence. There was significant difference between the pretest (128.00) mean value and posttest (121.60) mean value show that the yogic exercises have a positive effect on the systolic blood pressure reducing the of sports person. The graphical representation was shown at, figure no.2.

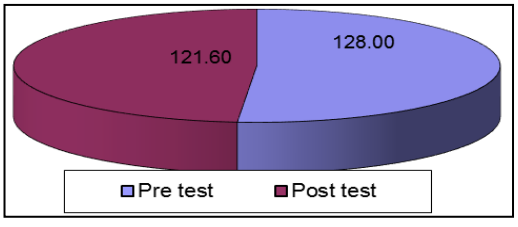

Fig 2: Mean of pretest and posttest of sports person on systolic blood pressure

Table 3: Comparison of pre test and posttest of sports person on diastolic blood pressure

Sources	N	Mean	S.D.	t-ratio
Pre test	25	84.80	3.67	0.85
Posttest	25	84.00	2.88	

Not significant.

Table 3 found that the t-ratio, S.D. and mean score of pre and posttest of yogic exercises on diastolic blood pressure. The t-ratio 0.85 was not significant at .05 level of confidence. There was not significant difference between the pretest (84.80) mean value and posttest (84.00) mean value show that no any effect on the diastolic blood pressure of sports person. The graphical representation was shown at, figure no.3.

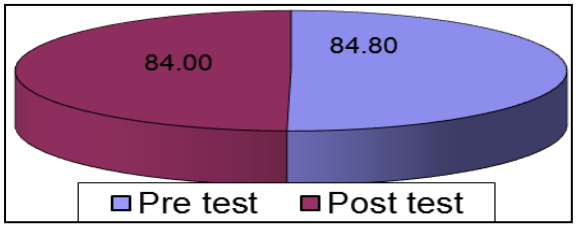

Fig 3: Mean of pre test and posttest of sports person on diastolic blood pressure

Conclusion

After this investigation results shows that yogic training that was given had appositive effect on reducing the systolic blood pressure, heart rate and no effect on diastolic blood pressure of sports person.

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