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Effect of Yogic Intervention on Selected Physiological Variables Among School Going Badminton Players

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Abstract

The contribution of physiological factors in sports helps an athlete to perform his best in training and competition. Well-developed physiology contributes to developing physical and psychological traits among individuals. The objective of this study is to establish the Potential effect of the Yogic Intervention on selected Physiological variables like; Resting Heart Rate, Blood Pressure, and Vital Capacity among School-going Badminton players' age ranging between 15 to 17 years. For this study, twenty Male Badminton players (N=20) were selected. They were divided into two equal groups and each group consisted of ten subjects, in which Group-I underwent Yogic Asana Practice and Group – II acted as the control group. The training period for this study was five days a week for twelve weeks. Before and after the training period, the subjects were tested for physiological changes through standardized test protocol. A Dependent t-test was applied to assess the difference between these groups. The findings of this study determined a statistically significant difference between pre- to post-scores of the Yogic Asana group.

Keywords: Yogic Intervention, Yogic Asana, Resting Heart Rate, Blood Pressure, Badminton.

Introduction

Yoga is an ancient Indian science that is claimed to help develop perfect physical, mental and spiritual health. Since Yoga aims at perfection of the mind and body, it became important to ask whether the progress towards perfection is reflected in bringing positive changes in physiological variables. Apart from this simple approach, there are many other aspects of Yoga that had fascinated and even provoked scientists to research deep into it. Madanmohan. et. al., 2008 explain **Y**oga also a psycho-somatic-spiritual discipline for achieving union and harmony between our mind, body and soul and the ultimate union of our consciousness with the universal**.** Tandon O.P. 2012 also explained that Pranayama is derived from two Sanskrit words namely, Prana, which means vital force or life energy, Ayama means to prolong**.** Several scientific studies have been conducted previously on Yogis who have been practicing Yoga for several years proved that Yoga can bring remarkable health benefits if practiced correctly for a longer period.

Physiology is the system of the way our body functions. Yoga has proven to benefit yoga at various levels just like reducing the resting heart rate and blood pressure. Dr. W. Selvamurthy presented in his study that practicing Yogic Asanas for 3 weeks was found to restore baroreflex sensitivity towards normal in patients having essential hypertension. Continuous practicing of Yogic Asanas and Pranayama have also proves the

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reduction in the resting respiratory rate with increased vital capacity, maximum voluntary ventilation, timed vital capacity, breath-holding time and maximal inspiratory and expiratory pressures in individuals. The present comprehensive study has been undertaken to evaluate the effects of twelve-week of Yogic practice on School going Badminton Players.

Methodology

The study was conducted on twenty Male Badminton Players (N=20) age ranging between 15 to 17 years. Two neighbourhood schools from Hisar (Haryana) were identified for this study. The subjects were equally divided into two groups. Group I (N=10) underwent Yogic Asana practice and Group II (N=10) remain as control. The training program was carried out five days per week for twelve weeks. The subjects were well informed about the aim of the study, and they voluntarily participated. The purposive sampling technique was used to collect the data. Resting Heart Rate, Blood Pressure and Vital Capacity were measured with the help of standardized equipments as shown in table 1.1. The data was collected before and after the training program. The dependent 't' test was applied to assess the difference between these groups.

Table 1.1

Variables and Equipment

Variables	Equipment
Resting Heart Rate	Manually
Blood Pressure	Sphygmomanometer and stethoscope
Vital Capacity	Dry Spirometer

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Findings of the Study:

Table 1.2

Pre and Post Test Scores of Selected Physiological Variables of Control Group

Variables	Pre-Test Mean	Post-test Mean	Mean difference	Std. Dev.	Df	't' Score
Resting Heart rate	71.60	71.40	.20	1.14	9	.557
Diastolic Blood Pressure	86.20	86.00	.20	1.14	9	.562
Systolic Blood Pressure	131.80	132.20	.40	2.45	9	.514
Vital Capacity	2397	2388	09	43.06	9	.661

Significant at 0.05 level

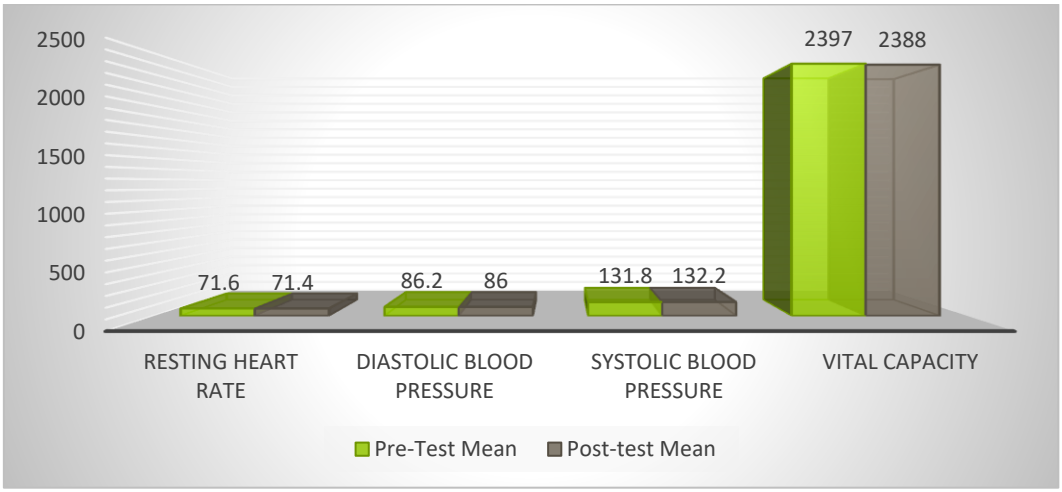

Figure 1.1: Comparisons of Pre and PostTest Mean Scores of Control Group

Table 1.2 represents the obtained 't' scoresof pre and post-test mean difference within the control group for the selected Physiological Variable i.e. Resting Heart Rate (.557), Diastolic Blood Pressure (.562), Systolic Blood Pressure (.514) and Vital Capacity (.661). The obtained scores when compared with the table value of

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2.262 at the degrees of freedom 9 found to be statistically non-significant at 0.05 level of confidence. It was observed that no significant difference was found in the control group.

Table 1.3

Pre and Post Test Scores of Selected Physiological Variables of Yogic Asana Group

Variables	Pre-Test Mean	Post-test Mean	Mean difference	Std. Dev.	Df	"t" Score
Resting heart rate	70.60	68.40	2.20	1.47	9	**4.72***
Diastolic Blood Pressure	85.20	83.20	2	3.88	9	1.62
Systolic Blood Pressure	131.80	126.40	5.40	3.14	9	**5.44***
Vital Capacity	2397	2530	133	142.20	9	**2.95***

Significant at 0.05 level

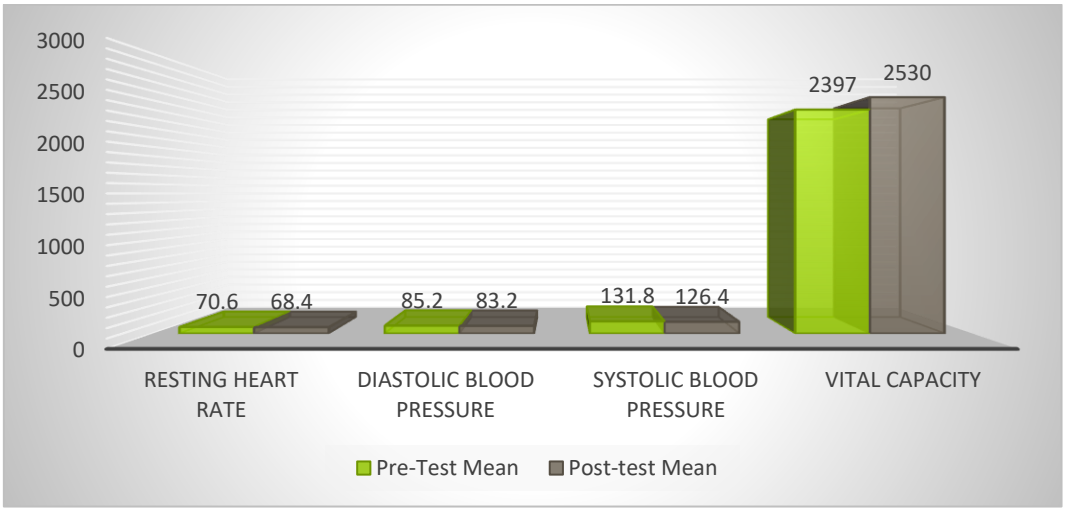

Figure 1.2: Comparisons of Pre and PostTest Means for Yogic Asana Group

Table 1.3represents the obtained 't' score for pre and post-test mean difference within the Yogic Asana Group for the selected variable of Resting Heart Rate (4.72*), Diastolic Blood Pressure (1.62), Systolic Blood Pressure (5.44*) and Vital Capacity (2.95*). The obtained score when compared with the table value

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of 2.26 of the degrees of freedom (9) was found to be statistically significant at 0.05 level of confidence. As the obtained value was found to be greater than the required value of 2.26, it is clear that the Yogic Asana group had significantly brought positive changes in Resting Heart Rate, Systolic Blood Pressure and Vital Capacity, whereas in the case of Diastolic Blood Pressure, no significant changes were recorded (Rai Gyanendu and Sarker, 2019).

Based on the findings of the study, it is clear and proven that the Yogic Intervention treatment applied to the Experimental Group had brought significant changes. The improved Physiological changes contribute to the wellbeing of an individual (Divya Kalimuthu, 2019). The physiological balance within our body maintains the proper homeostasis within the body. As the homeostasis system is the major system that is responsible for the proper function of the body through the channelized endocrine system (Tortora and Anagnostakos, 2006).

Conclusion

The above findings showed that the Yogic Asana Group which participated in a Yogic Intervention for twelve weeks had shown a significant improvement in Resting Heart Rate, Systolic Blood Pressure and Vital Capacity but no significant change was recorded in Diastolic Blood Pressure. Hence, we can conclude that the practice of Yogic Asana on regular basis will provide health benefits to school going Badminton Players and such improvements will help them to reach the desired Physiological attributes as per their sports requirement for their better sports performance.

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